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RESEARCH IN PSYCHIATRY

CHAIRMAN'S ADDRESS

H. DOUGLAS SINGER, M.D., F.R.C.P. (LOND.)
CHICAGO

An excellent review of modern trends of research in connection with psychiatry is contained in the Problem of Mental Disorder [1] published by the National Research Council. Some idea of the relative volume of investigations in the different fields can be gained from the report of Whitehorn and Zilboorg [2] for the Committee on Research of the American Psychiatric Association. Using as a basis of comparison the number of pages in three American journals (*American Journal of Psychiatry, Archives of Neurology and Psychiatry* and *Journal of Nervous and Mental Disease*) devoted to particular topics of research during the decade 1921-1930, they divided the material into (1) clinical studies, which decreased from 1,622 in the first five years to 1,492 in the second five years; (2) psychologic studies, which increased from 817 to 1,923 pages; (3) physiologic studies, which showed an increase from 247 to 404 pages; (4) studies dealing with the relation of psychiatry to medicine, sociology, law, and other subjects and (5) miscellaneous studies. Both of the last two categories showed some slight decrease in the second half of the decade.

These observations suggest that there has been a decline of activity in clinical studies, attention having been diverted to more abstract psychologic and more concrete physiologic methods. The exact degree of change is of course not reflected in the number of pages of printed material; my own opinion is that the swing to these other fields of study has been much greater than is thus presented. In any case the change is sufficiently great to justify some consideration of its significance and its bearing on progress in psychiatry.

One of the principal points I wish to stress concerns the importance of clinical research, and I shall discuss the relations that exist between clinical psychiatry and the two types of research included by Whitehorn and Zilboorg under the captions psychologic and physiologic. Though it may be unnecessary, it seems well to stress that what I shall say is in no sense critical of the quality of the work in these fields that is being done, nor does it belittle such applicability as the results may have in the practical treatment of patients.

It does, however, seem worth while to raise the question whether these types of study are strictly psychiatric, even though they yield results valuable in the clinical application of psychiatry. The answer to this question will necessarily turn to some extent on the interpretation of the word psychiatry. The suffix of the word (Greek, iatros) means treatment and at once indicates that psychiatry belongs in the practice of the art of medicine. When one attempts, however, to specify the particular forms of human illness with which it deals one is confronted with a difficult problem. Probably the answer that would be most satisfactory to psychiatrists would be that it includes those forms of illness which present evidences of disturbance in the higher levels of integration of the organism, particularly those into which enter the phenomena of consciousness. That such a definition is too broad, however, becomes clear from the consideration that adjustments at this level are concerned in practically all forms of illness. The body reacts as a whole even to disease of a particular organ, and there are evidences in all illness of disturbance in integration at all levels. I should answer this by saying that psychiatry permeates, or is an aspect of, all medicine. If one attempts to restrict the definition to forms of illness in which such disturbances are primary—that is to say in which disorder of the lower levels is secondary to derangement at the highest levels—it is my belief that sooner or later much of the traditional field of the psychiatrist, including most of the psychoses, will be excluded by the definition. Even the psychoneuroses, full credit being given to the significance of modern dynamic interpretations, need some additional factor for their full understanding, a factor that was expressed by Freud as a constitutional defect. The nature of this defect cannot be defined more exactly, but it may be suggested that it is apt to be found to depend on disturbance of function at lower levels, perhaps even the cellular level.

PSYCHOLOGIC AND PHYSIOLOGIC METHODS

The suggestion that psychologic research is not psychiatric may be confusing; the view has practical value in considering methods of research, however, though it needs elaboration if it is not to be misunderstood. I would compare the relations between these two disciplines with those which obtain betwen physiology and medicine in general. Physiology may furnish explanations of the symptoms of disease, but it does not explain the disease even when it provides means of importance in therapy. Insulin is today the best means available for combating the consequences of diabetes, but it is not a remedy for diabetes and does not furnish information as to the ultimate cause of the disease. Psychology, including the special technics of psychoanalysis, does afford an understanding of the mechanisms concerned in the formation of symptoms but cannot supply a complete explanation for the illness expressed in the symptoms. Dynamic psychology can explain the mechanism of a paranoid attitude or a com-

Read before the Section on Nervous and Mental Diseases at the Eighty-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 13, 1935.

1. The Problem of Mental Disorder, New York, McGraw-Hill Book Company, 1934.

2. Whitehorn, J. C., and Zilboorg, Gregory: Present Trends in American Psychiatric Research, Am. J. Psychiat. **13**: 303 (Sept.) 1933.

pulsive phobia but cannot furnish the reason for the adoption of one of these modes of reaction rather than of some more satisfactory form of response. In other words, psychologic studies can explain the form but not the fact of illness, and it is with the latter that psychiatry is ultimately concerned. I do not wish to stress this view unduly, for I recognize that in many cases it is more important therapeutically to understand the mechanisms and their relations with situations to be faced than to know the nature of a deviation in construction of the organism which may not be susceptible of modification when discovered. On the other hand, one should not rest content with even the most complete psychologic interpretation of symptoms if there is any prospect that the underlying cause of the illness may be remedied, and it is this which is the prime objective of psychiatric research.

To express this in another way, therapy based on psychologic principles, valuable as it is, must always remain symptomatic. The danger in the situation is that complaisance in the accomplishments achieved by these methods has and will result in neglect of more fundamental pathologic conditions. This I believe to be especially important in regard to the psychoses, as will become evident from what is to follow.

Turning now to the development of physiologic methods, it may at first glance appear that this type of attack is more directly in line with what I have in mind. However, I would suggest that somewhat similar differences exist here to those which I have already indicated for psychologic methods. A further objection to the use of physiologic methods at the present time consists in the fact that psychiatric knowledge is not ready for it. The only basis for correlations now available is the form of the psychosis, which is a psychologic and not a psychiatric basis. Correlations are being made with types of behavior—personality types—and not with disease entities.

Psychiatry is essentially a clinical subject. Advances in other fields of clinical medicine have led and not followed laboratory discoveries. It seems logical to conclude that this story will be repeated in psychiatry. One of the first desiderata in clinical research is a scientific classification of the phenomena observed. The classification of mental illnesses today is, to use the homely simile of Hughlings Jackson, that of a market gardener in regard to plants. Outstanding surface phenomena are the main basis of grouping. It is necessary to find fundamental and essential elements in order to achieve a classification comparable to that of the botanist. It may be that such criteria are already available but not yet grasped; it may be that they are still to be discovered. Much has been gained from the clear recognition of dynamic factors, at least from the point of view of therapeutic approach; with these as clues it may be that the still elusive principles underlying disease entities will emerge from these methods, but they are not yet evident.

Though it may seem to be a regression, I urge that there is still need of a continuation of the ancient methods of clinical observation, modified and elaborated to comply with advances already made. Probably no one today will accept in its entirety the classification formulated by Kraepelin. Even he, before his death, recognized that the prognostic criterion he used so largely in his earlier efforts failed to provide the goal he sought. Yet it is not questioned that course and outcome are individual characteristics of disease processes. I believe that the aim was sound and may still lead to success, if its implications are considered in the proper light. The end results of a disease do furnish clues as to the core of the damage or defect. This is well illustrated by the results of studies of aphasia; define the functions that have been destroyed and it becomes possible to formulate the location of the damage. In the same manner, painstaking study of end results in psychiatry by clinical methods will furnish clues to the parts that are damaged. Methods must be devised for isolating and defining functions that are permanently deficient, both in the psychoses and in the psychoneuroses. Since one deals with reactions of the total organism, these methods must be such as to test the behavior of the patient in situations resembling those encountered in life and not merely such as to investigate the function of some organ or system. There is no justification at present for assuming that any part physiologic action, hormonic, metabolic or any other, can be accepted as an indication of the existence of particular changes in biologic reaction, though it is possible that later such may be found.

DIFFERENTIATION OF PSYCHOSES

To illustrate the points I am trying to make, it seems well here to discuss briefly some of the forms of mental illness that are too often dealt with as if they were nosologic entities. First may be considered the concept of oscillations of mood as defining a particular form of mental illness, called by Kraepelin manic-depressive. This he considered a fundamental characteristic distinguishing these psychoses from types that tended to end in a peculiar form of deterioration.

Manic-depressive reactions may be considered from two points of view, the one psychiatric and the other psychologic, as I would express it (1) the seat and nature of the condition causing the disorder in mood; (2) the character of the behavior that expresses the disturbance in mood. It is difficult to avoid the conclusion that, in much of what is written and taught, these two aspects of the problem have been confused. Brief consideration of clinical facts reveals that swings of mood of this kind occur under widely different conditions, some including disease within the body, others involving mainly environmental situations to be adjusted to. For example, there are: (*a*) the manic-depressive psychoses without discovered pathologic changes within the body; (*b*) swings of mood associated with bodily disease, which is not confined to the nervous system—dementia paralytica, arteriosclerosis, diseases of the thyroid gland, heart disease, and so on. The occurrence of this one feature under such widely different conditions seems to justify the conclusion that it is not a single disease but rather a particular location of damage or defect in the structure of the integrating machinery of the body, probably at a vegetative level. From the point of view contained in the second category mentioned, that of the type of behavior exhibited, however, there is also a wide variation of the form in which the mood is expressed, which may or may not have certain relations to the particular form of the disease that is present, but which more often seems to depend on the type of personality of the patient. One finds oscillations of mood labeled from this point of view as manic-depressive, schizophrenic, delirious and paranoid. There are thus presented numerous problems for psychiatric clinical investigation, and the doubtful value of correlations with physiologic study are strongly emphasized.

Turning now to the group of psychoses labeled schizophrenia or dementia praecox, one finds that somewhat similar comments apply. Here, however, the

problem is even more complex. The occurrence of deterioration is today more or less ignored as a criterion for classification, and inclusion in the group depends on the observation of patterns of behavior that are characterized by excessive use of occult or highly symbolized responses—caricatures apparently of those features of human behavior which render social life possible—the repressive and substitutive types of reaction. One need not question the propriety of classifying psychologically such behavior in one class, but few will disagree with the remark that it is not a nosologic or psychiatric unity. Ignoring the occurrence of schizophrenic behavior in many different forms of disease of the body, just as was true of the manic-depressive reactions, and considering only the group of schizophrenia as currently defined, the variability in course, manifestations and outcome is so great that it seems impossible to consider this group as representing a single disease process. From the point of view of course alone it is well recognized that some cases represent apparently swings of mood with schizoid coloring—currently spoken of as schizophrenia with manic-depressive features; some are acute reactions, apparently to external environmental situations, and end in complete recovery; some cases terminate with the phenomena of more or less severe "deterioration." Too little attention has been given to these terminal states; all show some loss of capacity for integrated behavior, but the capacities lost are not the same in all. I would stress particularly the psychiatric importance of devising methods for defining what has been lost, for this I believe will furnish criteria for splitting up this enormous group and possibly even for learning the seat of the damage. In still other cases there are the well known disturbances in muscle tone, which surely cannot be ignored in the effort to establish disease entities.

Throughout all the forms, it is true, runs the common factor of the character of the behavior. It seems worth while to insist that this is a psychologic distinction and not a psychiatric one. It concerns not the disease or defect that is present but rather the kind of person who is ill.

From these considerations it seems clear that there is no valid basis in these psychologic differentiations for correlation with special methods of laboratory research, physiologic or pathologic. Healthy persons, healthy in the sense that their behavior enables them to meet more or less satisfactorily to themselves and to society the conditions of social life, all present a combination of varying proportions of the factors that have just been considered in the two large categories of named psychoses. All show more or less evident cyclic swinging of mood, the cycles being interrupted, it is true, in their regularity by demands for reaction to situations of biologic importance in the surroundings. In all there are more or less well marked the mechanisms of repression, substitution and symbolization which, when exaggerated for any reason, constitute the mechanisms underlying the psychologic classification of schizophrenia.

The situation is much the same in regard to the psychoneuroses. Until the advent of modern dynamic concepts of behavior, this group was even less studied than that of the psychoses. Except for a very superficial sorting, little attempt had been made to classify these heterogeneous clinical pictures. There is growing a method of subdivision that is based, even more than is true of the psychoses, on dynamic psychology. This method of classification has decided advantages from the point of view of therapy. Nevertheless, it is psychologic rather than psychiatric. Included among these conditions, I am convinced, are some which clinical study will demonstrate to possess characteristics, corresponding with course and outcome, that would justify psychiatric subdivision, even if the majority must be grouped in a psychologic manner.

FUNCTION OF CLINICAL RESEARCH IN PSYCHIATRY

The statements I have made are certainly not new and probably will be accepted, though perhaps sometimes grudgingly and with reservations due to personal interests and orientation, by all engaged in teaching and research in psychiatry. The formulation in this way is the outcome of an effort to outline for myself the aims and meaning of psychiatric research. I have asked myself Why do certain conditions give rise to a mental illness, whether psychosis or neurosis, in one person and not in another? Is one to rest satisfied with such vague generalizations as constitutional deficiency or endocrinopathy? Are such factors as lack of courage and lack of energy, regression to a lower level of behavior and retirement to a world of fantasy explanations or are they merely methods of describing what is observed? To me it seems that the prime function of psychiatric research is the discovery of the mechanisms that permit the development of an illness, no matter what the precipitating or concomitant circumstances. The practicing physician will, of course, use for therapeutic purposes all available means of ameliorating and modifying favorably the symptoms of an illness for which he is consulted, even if he does not know the actual cause or nature of the illness. His observations and results, if adequately recorded and evaluated, may furnish clues to the causes. Rational therapy and improvements in methods of prevention become possible only with knowledge of the fundamental etiology. For example, advances in methods of prevention of and treatment for dementia paralytica, with its wide variety of psychologic pictures, have come only with knowledge of the causative agent; it may be emphasized here that this agent was recognized from purely clinical research long before the spirochete was discovered; improved chemical means for combating it followed. Pyretotherapy likewise was the result of clinical observation, and research is only now endeavoring to unravel the mechanisms through which it operates.

The question will undoubtedly be raised as to what is meant by clinical research. The methods are no different in principle from those employed in other fields of medicine. I do not share the not uncommonly expressed opinion that psychiatry has graduated from the stage of description to that of interpretation. This may be true of psychology, but not of psychiatry. It may be granted that there has been careful and adequate description of the superficial manifestations and spontaneous behavior. What remains to be done concerns the devising of methods of recording the responses to controlled situations, planned with the purpose of defining exactly what integrated functions persist in any given case and what are lost or in abeyance. This is a long, tedious road, requiring persistence, imagination and ingenuity, the usual tools of research, but it is I believe the only road that will lead to a successful classification on an etiologic basis and through this to adequate correlation with other fields of research.

In this connection it seems worth while to recall the plan of analysis followed by Hughlings Jackson in his

studies of what he called the evolution and dissolution of the nervous system. This should be extended to include not the nervous system alone but all integrating mechanisms, the lowest as well as the highest. Studies of the evolution of behavior in the child, already initiated, need to be carried out in detail and by methods which are comparable with those to be used in the clinical study of patients. It seems premature to speak of regressions to a lower level of behavior until something more is known of its progressions. For the studies of dissolution one has available all the experiments of nature which make up all mental illnesses under the heading of psychiatry, including the various conditions of arrested development. This whole field has been only scratched; there is much to be done in actual tilling by devising methods for determining and specifying what is present and what is lost. These methods are essentially clinical. They need to be worked out, at least primarily, through intensive and prolonged studies of individual cases rather than through statistical methods with a mass of material.

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AIR EMBOLISM

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Air embolism is a rather infrequent complication of various surgical procedures in each of which air is permitted to enter the venous system. Cases of air embolism may be divided into two large groups—one in which air gains entry to the peripheral venous system and the other in which air enters the pulmonary venous circuit.

Air embolism resulting from air entering the peripheral circuit has been encountered in practically every surgical field. The first recorded case was reported in 1818 by Beauchesne;[1] it followed removal of a tumor from the neck and was proved at autopsy. Nordland and his co-workers[2] reported a series of experiments performed on this type of air embolism in dogs. They injected varying amounts of air intravenously and observed that as much as 30 cc. could be injected rapidly without any ill effects. As larger amounts were used various clinical effects were noted, characterized by alterations of the blood pressure, cardiac and respiratory irregularities, and finally death. Death was as a rule produced by amounts as large as 160 cc. If the chests of the animals were opened ante mortem, the heart was found beating irregularly and ineffectually, and a churning, splashing sound could be heard. Incision into the right ventricle led to a pouring out of frothy blood, and a reestablishment of the cardiac rhythm for a short time. When these animals were examined post mortem, the great veins, the right side of the heart and the pulmonary artery were found filled with air bubbles and frothy blood. When smaller amounts are injected, the air is propelled into the pulmonary circuit and gradually absorbed from the capillaries. A similar effect is obtained when larger amounts are injected over a longer period of time. It was concluded that the cause of death in these cases was inefficacy of the cardiac action, affecting especially the right side of the heart. Owing probably to the easy compressibility of the air, the valves are not properly opened and the circulation comes to a standstill. To this is added the development of an acute hypertension of the lesser circuit due to a very diffuse capillary block of the pulmonary vessels by air bubbles.

These results are similar to those observed clinically. Small amounts of air have been observed repeatedly to be harmless in the human being when injected intravenously during transfusions and other intravenous infusions. Clinically, however, air embolism occurs when large amounts of air are allowed to enter a vein. The requirements for such an occurrence are filled when (*a*) a vessel is only partly severed, preventing collapse, or even in complete severance when the surrounding tissues are firm, thus preventing venous collapse and retraction, or (*b*) the venous pressure is negative or the air pressure positive. Probably the most frequent source of air embolism is in the region of the great veins of the neck, following thyroid and other operations. The required conditions are here fulfilled, for (*a*) the oblique passage of the veins through several layers of firm cervical fascia prevents immediate collapse and retraction, even when the vessel has been completely cut across, and (*b*) the venous pressure in the great veins of the neck is negative during inspiration, even with the patient in a prone position. When a vein is cut, the first sign is usually a hissing sound in the wound—"sifflement"—as the air is sucked in; clinical evidences manifest themselves variously depending on the amount of air aspirated—dyspnea, cyanosis, coma, cardiac arrhythmia, apnea and death. A murmur—"bruit de soufflement"—has been described over the heart, due to the churning about of the air. (This bruit is constantly found in experimental animals.)

Cases of air embolism have been reported following wounds of the neck, irrigation of the maxillary sinuses, manipulation of the intracranial venous sinuses, fractures affecting the long bones, especially the tibia, manipulation of the pregnant and puerperal uterus, and air injection into the urethra, the bladder and the peritoneum.

Mathé[3] reports a case of fatal air embolism following injection of 300 cc. of air into the bladder in a case of bladder tumor. At necropsy, open vessels were found in an ulcer in the tumor; the inferior vena cava, the hepatic veins, the right side of the heart, and the pulmonary vessels contained large amounts of air and frothy blood. He wrote questionnaires to other genitourinary specialists and found that fatalities or less serious accidents following injections of air into the urethra or bladder were not uncommon, and he advises against the use of air for this purpose.

Gording[4] discusses the question of air embolism following puncture of, and injection of air into, the maxillary sinuses. The entrance of air under high pressure into open ulcerated vessels provides the necessary factors for air embolism, and he believes that he has successfully reproduced the syndrome in animals. He also quotes a case in which the lateral sinus was

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1. Beauchesne, cited by Gough.[6]
2. Nordland, M.; Hall, B. E., and St. Cyr, K. I.: West. J. Surg. **39**: 581 (Aug.) 1931.
3. Mathé, C. P.: Surg., Gynec. & Obst. **48**: 429 (March) 1929.
4. Gording, R.: Ann. Otol., Rhin. & Laryng. **29**: 293 (June) 1920.

opened and air was heard being sucked into this vessel with clinical production of air embolism.

Bingel [5] reports the air irrigation of a peritoneal pocket in a case of subphrenic abscess. The patient became comatose and a "water-wheel" murmur was heard over the heart. As a rational therapeutic procedure a needle was introduced into what was thought to be the right heart, and 3 cc. of air was withdrawn. The patient recovered from the air embolism.

Gough [6] quotes and reports cases occurring in the practice of obstetrics and gynecology. Most cases follow the injection of air (with or without fluid) into the uterus during attempts at criminal abortion. Death frequently follows, and autopsy reveals air in the heart and pulmonary artery. Similar cases may follow removal of a placenta praevia, cesarean section and a douche for adhering placenta. He reports one case in which the patient collapsed and died after an apparently normal delivery. Postmortem examination revealed air in the right heart and pulmonary artery.

Most of the cases that have been reported of air embolism resulting from air entering the pulmonary venous circuit have followed artificial pneumothorax. Other causes are injury to the chest wall and lung, pleural lavage in empyema, possible passage of air through the pulmonary capillaries (or through a patent foramen ovale) when the case is one of air embolism described in the first group, and escape of air from solution in the blood (caisson disease).

REPORT OF CASES

CASE 1.—S. H., a woman, aged 22, Jewish, in whom the onset of tuberculosis occurred in August 1933, had a lesion consisting of diffuse caseation with cavitation, through the left lung. Artificial pneumothorax was started in October. The patient was discharged to the clinic for refills in February 1934 with negative sputums and an atelectatic lung; several firm adhesions were present. In spite of refills the lung reexpanded, owing to an obliterative fibrosis of the pleura. She was returned to Kings County Hospital in August 1934 for reestablishment of pneumothorax, which had been completely absorbed. The first trial to secure a new collapse showed no free pleural space. The next day another attempt was made in another location (August 13). The manometer showed free fluctuations, with pressures of —4, —2 cm. of water. From 10 to 15 cc. of air was introduced and another reading taken. There was no fluctuation. At this point the patient moaned and turned pale. The needle was withdrawn at once. The patient became intensely cyanotic; a stertor developed and then apnea. The pulse could not be felt. Irregular convulsive movements were noted. Therapy included artificial respiration, caffeine and epinephrine intramuscularly, and epinephrine intravenously. After about one-half hour there appeared a complete left hemiplegia, including facial and hypoglossal paralysis and positive Hoffmann and Babinski signs. Consciousness partially reappeared in about one hour. After six hours the only symptoms remaining were slight mental confusion and headache; these were gone the following morning. No further attempts at pneumothorax were thought advisable in this case, and thoracoplasty was advised.

CASE 2.—A. W., a man, aged 24, Jewish, in whom the onset of tuberculosis was thought to have occurred in August 1934, but from the fibrotic nature of the lesion as it appeared roentgenographically it was probably present as an asymptomatic lesion for a considerable time. The lesion was a diffuse, but not very dense, fibrocaseous tuberculosis through the left lung, with the largest cavity about 2 cm. in diameter. Pneumothorax was started October 6, with a great deal of difficulty in finding a free space. November 3 an attempt at pneumothorax gave no readings. Before any manipulation or introduction of air was resorted to, the patient complained of dizziness and weakness and the needle was withdrawn. He then complained of numbness of the right arm and leg. There was no loss of consciousness or disturbance of respiration or cardiac action. Neurologic examination revealed a right-sided hemiplegia, with right-sided hemianesthesia. There was no involvement of the cranial nerves, Babinski sign, or aphasia. The patient was reassured, but no other therapy was used. Complete recovery occurred within one hour. A roentgenogram (which had been taken the day before the accident) showed that the small peripheral collapse previously present could no longer be seen. Several cautious attempts at pneumothorax were made later, but no free pleural space could be found.

CASE 3.—M. E., a woman, aged 30, Norwegian, in whom the onset of tuberculosis occurred in November 1933, had a fibrocaseous lesion of the right upper lobe with several fibrous cavities. Pneumothorax was attempted on several occasions, with six punctures, all unsuccessful in finding a free space. Another attempt was made Oct. 3, 1934. No free space was found, but during the manipulations bright red blood welled up through the needle when the patient coughed. The needle was at once withdrawn and the patient put to bed. She complained at once of feeling dizzy and after three or four minutes presented marked mental confusion, and disorientation, and had crying spells, and hallucinations. These phenomena subsided in about one hour. The following features made us feel that we were dealing with an organic rather than a functional disturbance: (*a*) The patient had never shown any evidence of psychiatric symptoms previously. (*b*) The treatment was painless. (*c*) She did not realize the significance of our being unable to find a free space. (*d*) She subsequently underwent a thoracoplasty with no evidence of mental disorder. (*e*) The symptoms appeared a few minutes after a lung puncture and one that had penetrated a pulmonary vein.

CASE 4.—H. Z., a woman, aged 28, Jewish, in whom the onset of tuberculosis occurred in 1928, had a pneumothorax on the left side discontinued to enable the start of pneumothorax on the right side in September 1934. Each lung presented partial collapse, pleural adhesions being present. The last refill was given Nov. 23, 1934, with no unusual reaction. Her condition remained fair until November 26, at which time, without any previous clinical warning, she suddenly became comatose, exhibiting convulsive seizures, coma and cyanosis. She recovered temporarily and was found to be blind. Before careful ocular study could be made, the blindness gradually disappeared. It was followed within the next few minutes by further convulsions and death. Autopsy was not secured. Clinically this case was one of cerebral accident. In the presence of artificial pneumothorax with adhesions, and severe coughing spells, and in the absence of any cardiovascular disease, of syphilis or of a previous neurologic lesion, and in view of the youth of the patient, we feel that the most likely cause of death was air embolism, in spite of the absence of a recent treatment. The mechanism was possibly a small intrapulmonary rupture, or tear of an adhesion with an alveolovascular communication.

CASE 5.—C. W., a white woman, aged 22, in whom the onset of tuberculosis occurred in January 1933, had pneumothorax started in April 1933 and continued at weekly intervals to the time of her admission. The patient was admitted to Kings County Hospital April 24, 1934, with a history of having received a refill that morning and of falling unconscious immediately after getting up from the table. On examination the patient was comatose with occasional clonic and tonic convulsions. There was marked spasticity of the entire body, with exaggerated reflexes and a bilateral Babinski sign. Spinal tap taken at this time was negative. The neurologic diagnosis was decerebrate rigidity. A roentgenogram of the chest taken at this time revealed a small basal partial right pneumothorax, with the remaining lung showing a fibrocavitary lesion. The patient remained unconscious for from three to four days and then showed signs of a complete left hemiplegia. The paralysis gradually disappeared, complete recovery having been reached at the end of four weeks. The patient was discharged, June 3.

5. Bingel: Zentralbl. f. Chir. **50**: 433 (March 17) 1923; Abst. J. A. M. A. **80**: 1743 (June 9) 1923.
6. Gough, J. A.: Surg., Gynec. & Obst. **39**: 27 (July) 1924.

The following four cases were seen in the private and consulting practice of the senior author.

CASE 6.—F. S., a white woman, aged 22, in whom the onset of tuberculosis occurred in 1929, when seen in July 1931 was emaciated; the lungs presented a nodular caseous infiltration of the right upper lobe and cavitation destroying the greater part of the left upper lobe, with caseation to the fourth rib anteriorly. It was felt that the lesion was too extensive and the general condition too poor to resort to pneumothorax at that time. After a period of eight months of bed rest, with marked clinical improvement and fibrotic changes in the lesions, an attempt was made at pneumothorax on the left side. The pleural space was entered without difficulty and seven treatments were given, of 300 cc. each. Fluoroscopy showed a small basal pneumothorax. On the eighth treatment the needle entered the pleural space (pressure 0, + 2); after 100 cc. the pressures were + 2, +4. The valve was opened and air was again run in; at this point the patient exclaimed, became in rapid succession pale, unconscious, cyanotic, apneic and pulseless and then died, in spite of the use of artificial respiration and intracardiac epinephrine. Necropsy was not performed. The mechanism in this patient was undoubtedly the partial severance of a vascular adhesion with air forced into the vessel thus exposed.

CASE 7.—T. L., a white man, aged 35, in whom the onset of tuberculosis occurred in 1930, first seen in July 1931, had a lesion that consisted of a fibrocavitary tuberculosis affecting especially the right upper lobe. Artificial pneumothorax was started in August 1931. The first three treatments of 175, 600, and 600 cc., respectively, were given with little difficulty. On the fourth treatment the pressures were — 2, + 2, going to — 4 with deep inspiration. The manometer was then closed and the air allowed to run in. After about 20 cc. had been given, the patient complained of pain in the right leg; he immediately became unconscious, with the development of pallor and then cyanosis; respirations ceased and the pulse became imperceptible. Treatment of artificial respiration and intravenous epinephrine gradually brought about reestablishment of the vital functions. It was then noted that there existed a complete right hemiplegia; at this time (from fifteen to twenty minutes after the accident) the eyegrounds were normal. When consciousness returned the patient was found to have a complete aphasia. These neurologic manifestations all disappeared within the next twenty-four hours. Fluoroscopic examination after recovery showed no pneumothorax, and the conclusion was arrived at that the air must have been injected into the lung during all four treatments, in spite of deceptive manometric oscillations.

CASE 8.—E. R., a white woman, aged 30, in whom the onset of tuberculosis occurred in 1931, had a left pneumothorax started in 1932 and continued with a partial but apparently satisfactory collapse until May 1934, at which time a spreading lesion was observed on the right. The left lung was allowed to come out and pneumothorax was started on the right. In spite of attempts at a bilateral partial collapse, the left lung became adherent to the periphery and began to reexpand rapidly. August 19 the needle was introduced into the left side of the chest. No readings were obtained. In the midst of the ensuing manipulations, no air was being introduced, the patient cried out and the needle was withdrawn. She became unconscious, very pale, and then cyanotic. The pulse became slow and irregular (from 40 to 50); respirations became slow (from 4 to 5) and irregular and gasping. After a period of from four to five minutes, during which epinephrine and caffeine were used liberally, the patient made a gradual and uneventful recovery. In this case the beveled tip of the needle must have effected a continuous passage between a pulmonary venule and an alveolus.

CASE 9.—L. L., a white man, aged 19, in whom the onset of tuberculosis occurred in January 1933, was first seen in January 1934. The lesion consisted of a bilateral upper lobe fibrocavitary tuberculosis. Pneumothorax was attempted on the left side in February 1934. After several unsuccessful attempts, scanty oscillations were obtained (0, — 2). As no better fluctuations could be secured, a small amount of air (from 5 to 10 cc.) was introduced. This was followed immediately by restlessness, vomiting, pallor, cyanosis and profuse perspiration. Consciousness was not lost. When his condition was no longer critical, paralysis of the right leg was noted. This cleared in from two to three hours, leaving no residuum. In this case the needle must have been at least partially in one of the branches of the pulmonary veins.

COMMENT

Air embolism occurs about once in every 500 to 1,000 pneumothorax treatments.

Pathogenesis.—The factors necessary for the production of air embolism of this type are the same as those stated previously. The normal lung is elastic, and the lung and blood vessels tend to be pushed away by the needle rather than to be punctured, and the vessels tend to retract or collapse when punctured. However, when the lung is fibrotic, firm and adherent, with thick, vascular pleural adhesions, collapse becomes much more difficult, as does vascular retraction. The second provision—increased air over venous pressure—is normally present. The pressure in the pulmonary veins is normally less than atmospheric, by as much as from 14 to 16 cm. of water [7] and from 5 to 6 cm. less than the intrapulmonary pressure, and this difference is markedly accentuated when the air pressure is increased by the use of the pneumothorax machine or by coughing, or when the venous blood pressure is decreased by forced sudden inspiration. The perforated vessel through which the air enters may be in the lung or in a vascular adhesion. Riviere says that such vessels may enlarge to almost angiomatous dimensions. Schlaepfer [8] attempted to reproduce in dogs the pulmonary conditions of a fibrotic tuberculous process, by artificial vascular obstruction at the hilus and succeeded in the production of vascular adhesions in the pleura, which established anastomoses between the pulmonary and the peripheral venous circuits. Air introduced into such a vessel would then pass through the left side of the heart and thence to the general arterial circulation, as would air introduced into a branch of a pulmonary vein. The air may come from one of four sources: (*a*) The air may be introduced by the operator from the pneumothorax apparatus, (*b*) it may be sucked in from the tubing of the manometer, (*c*) it may be sucked in from an alveolus or bronchiole, the bevel of the needle acting as a connection between the air sac and the blood vessel, or (*d*) by a similar action it may be sucked or forced in from the pleural space if a partial pneumothorax already exists.

Clinical Features.—This syndrome has been amply reproduced in animals of all sorts,[9] but in them the features are similar to those in man except that the syndrome can be observed more exactly and dispassionately. The type of case in which air embolism is found, when associated with artificial pneumothorax, is practically always one in which the lung appears more or less fibrotic, and the pleura is, and feels, thickened when perforated. In this group is found the case in which pneumothorax was once given and abandoned, as well as the one in which the lung has been gradually reexpanding owing to an obliterative pleuritis, in spite of continued pneumothorax treatments. If careful roentgen study is not made as the treatments are continued, the latter eventuality may develop with the physician unaware of its occurrence. In these cases, in which as a rule no free space can be found, many punctures are made and often, as well, hazardous attempts at introduction of air in the absence of satis-

7. Riviere, Clive: The Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis, New York, Oxford University Press, 1927, chapter 18.
8. Schlaepfer, Karl: Surg., Gynec. & Obst. **37**: 510 (Oct.) 1923.
9. Wever, E., quoted by Lillingston, C.: Tubercle **4**: 193 (Feb.) 1923.

factory readings. By far the most frequent occurrence is at the induction of the pneumothorax, and especially the third or fourth attempt when there is no established air space.

Before we pass on to a more detailed description of the syndrome, it is desirable to mention the other causes of this type of air embolism. Chest injury is one of the less common causes. Cases of air embolism have resulted from pleural lavage in empyema. Schlaepfer [10] studied cases of general reaction following pleural lavage, changing chest drainage tubes and the like and came to the conclusion that most of them were true cases of cerebral and peripheral embolism, finding such pathognomonic signs as blindness, hemiplegia, and marbling of the skin. Brandes [11] encountered a fatal reaction while injecting bismuth paste into an empyema cavity to outline it. At the autopsy the patient was found to have bismuth in the cerebral vessels, and an open vessel was discovered in the chest cavity. One type of air embolism due to air in the peripheral arteries, not usually considered as air embolism, is caisson disease. In this condition the air is liberated from solution in the blood by a decrease in compressed air pressure. The symptoms are due in 90 per cent of the cases to peripheral air embolism affecting the muscles; in about 10 per cent cerebrospinal involvement is shown by vertigo, paralyses and death. However, as already stated, the majority of cases of air embolism are associated with pneumothorax therapy.

Practically always on introduction of the needle the readings are found to be unsatisfactory, resulting in either no fluctuations or those characteristic of intrapulmonary pressures (-2, $+2$, perhaps going to -4 with deep inspiration or to $+4$ with cough). Occasionally, however, satisfactory readings of not very great negativity may be obtained, as -4, -2, becoming even more negative with forced inspiration. In the last type of case, when symptoms of embolism follow the injection of even a small amount of air, the possibility of the negativity being due to an intravascular location of the needle tip must be considered, although the probability is greater that the needle, originally intrapleural, is dislodged by a respiratory movement. The symptoms of embolism may manifest themselves before any air is introduced (on which occasions it comes from an alveolus or the pleura) or after a variable amount has been allowed to run in—anywhere from 10 to 500 cc. Similarly, they may appear when the needle is in place, immediately on its withdrawal or after several minutes.

As a warning sign the patient may cough up a small amount of blood, or blood may well up through the needle or may be found on the tip of a stylet introduced to find the cause for the absence of proper fluctuations. The initial symptoms vary from slight to severe. Often the patient will first complain of local pain, of severe coughing or of feeling "queer." The first sign may be pallor or dizziness, followed by coma and sudden death, a neurologic lesion or mental confusion. Objectively the first sign is often pallor, commonly followed by intense cyanosis. Bradycardia, loss of consciousness, convulsive twitching, cardiac irregularities, apnea or respiratory difficulty, urinary and fecal incontinence, and vomiting may occur in the severe cases. Focal neurologic signs may appear at once or not until the elapsing of a variable number of minutes. Any part of the brain may be involved; the commonest of the easily recognized syndromes is hemiplegia. It is claimed that when the patient lies on the right side the left common carotid will be involved most frequently, and vice versa, because of the tendency of the air to float uppermost on the blood stream; but this is not borne out by the statistics. Undoubtedly many other areas of focal embolism occur, but, because of the transient nature, the difficulty of diagnosis and the direction of all efforts toward the desperately ill patient, these are usually overlooked. Areas of skin blanching and marbling as evidences of air embolism are mentioned. In the *Lancet* [12] is reported one case in which two clearly demarcated areas of skin blanching appeared on the left arm, evidences of obstruction to two branches of the left brachial artery. The relationship of coronary air embolism to the clinical features and to sudden death is questionable. In animals it has been shown [13] that injections of intracoronary air are capable of causing death. Air in the retinal arteries has been described [14] as visualized with the ophthalmoscope and may be the explanation for the presence of blindness as one of the symptoms of cerebral air embolism. Since time cannot usually be spared to examine the eyegrounds in these cases, because of the urgency of the general condition, the detailed description of the changes is taken from Wever's [9] work on monkeys. When only from 1 to 2 cc. of air was injected into the carotid, the retina presented first bubbles and then columns of air in the arteries. These could be seen to lengthen and thin out into silvery streaks as the smaller, usually invisible arterioles became distended with air. The veins were then seen to be distended, but no air could be seen; the last mentioned was thought to be due to the presence of many microscopic bubbles that had passed through the capillaries. In some cases temporary mental changes—confusion, emotional disturbances and the like—may be the focal signs. In such instances the symptoms must be very carefully evaluated, to rule out the more common "nervous" manifestations that may follow any more or less painful procedure. The further course of the condition varies with the individual case. In some the condition clears very quickly, while in others recovery may take a period of time varying from hours to many days. Occasionally a permanent defect may result.

Prognosis.—Air embolism is fatal in percentage varying from 15 to 50. Five of Reyer and Kohl's [14] ten patients died (50 per cent); only two of our nine patients died (22 per cent). On the other hand, the prognosis of the patient who survives the first ten or fifteen minutes after the accident is good, and after one hour has elapsed the danger is very slight, even in the face of persistent coma or paralysis. The prognosis of recovery of the focal neurologic lesions is also good.

Pathology.—Some cases have come to autopsy without any definite changes, the air escaping, or perhaps being divided up in the capillaries and arterioles. Other cases show air in the cerebral vessels. In this connection it is well to mention Riviere's [15] warning that air may normally be present in the pial veins. Some pathologists advocate doing the head under water, better to detect the presence of air. The skull should be opened with the greatest of care. Bishop's [16] case

10. Schlaepfer, Karl: Bull. Johns Hopkins Hosp. **33:** 321 (Sept.) 1922.
11. Quoted by Schlaepfer.[10]

12. Walker, V. B.: Lancet **1:** 636 (March 25) 1933.
13. Rukstinat, George: Experimental Air Embolism of the Coronary Arteries, J. A. M. A. **96:** 26 (Jan. 3) 1931.
14. Reyer, G. W., and Kohl, H. W.: Air Embolism Complicating Thoracic Surgery, J. A. M. A. **87:** 1626 (Nov. 13) 1926.
15. Riviere: The Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis, p. 213.
16. Bishop, H. A.: Am. Rev. Tuberc. **10:** 591 (Jan.) 1925.

showed air in all the vessels of the right side of the brain. Saugman [11] also reports such cases. The pathologist must be careful not to mistake air introduced by decomposition, or from without, for air embolism.

Therapy.—This feature is logically divided into two parts, prophylaxis and actual therapy. Of these, the former is of much more importance. The following are some of the many suggestions made by various operators:

Air should not be given unless the fluctuations are those of intrapleural pressures; use of a blunt needle, on the initial treatment especially, to lessen the chance of pulmonary or vascular puncture; use of very fine needles with short bevels to lessen the trauma; use of wide-bore needles to make the chance of entering a vessel slighter; use of air under negative pressure to lessen the chance of forcing it into a vessel; use of a very short and thin manometer tubing to lessen the chance of air being sucked out of this tube into a blood vessel; use of a manometer with a tambour instead of a water manometer to lessen the chance of suction of air from the manometer tube; use of specially constructed syringes; use of oxygen or carbon dioxide instead of air, especially for the initial treatment; prevention of coughing and deep breathing during the initial treatment; keeping the patient's head below the rest of the body during the initial treatment; keeping the patient on the table for from ten to fifteen minutes after a treatment, and especially when it is felt that the lung has been punctured, or blood has been seen on the needle or stylet.

The latter two provisions are suggested by Reyer and Kohl, because many patients develop symptoms only when the head is raised as the patient starts to get off the table. This was also found true in dogs,[10] which developed cerebral embolism only when the head was elevated. Clinically, however, cases have occurred with great frequency with the needle yet in the chest and the head lower than the chest. J. B. Murphy [11] suggested cutting down on the pleura in every case to prevent the development of air embolism. It is difficult to analyze and evaluate most of these devices, as each has some theoretical or actual reason. Most important of the precautions to be followed are as follows: (*a*) Unless on fluoroscopy or recent roentgenogram the lung is seen to be well away from the chest wall, no air should be given until free characteristic intrapleural oscillations can be secured. (*b*) The greatest of care must be used on the initial treatment, as well as in those patients in whom difficulty has been experienced: A blunt needle is desirable. The readings should be taken every 5 to 10 cc. for the first 50 cc. at least, to preclude the possibility of the needle tip, originally intrapleural, having penetrated the lung. The needle, when once in the pleural space, should be held firmly to prevent its dislodgment. The slightest untoward movement or sign on the part of the patient should result in the withdrawal of the needle. If a free space is not found at once the operator should be especially on guard for the development of air embolism. Epinephrine should be near at hand. The first treatments should be given, or at least supervised, by one who has a great deal of experience with artificial pneumothorax therapy.

Therapy after cerebral embolism has occurred is symptomatic and may vary from simple reassurance to epinephrine (intravenously or intracardiac if necessary), caffeine, artificial respiration, and the like, depending on the manifestations in the individual case. If there are no other contraindications, artificial pneumothorax may later again be resorted to.

Diagnosis and Differential Diagnosis.—To the physician who is familiar with the syndrome, the sudden appearance of symptoms during or immediately after a treatment will present little or no diagnostic difficulty. Air embolism bears no resemblance to tuberculous meningitis or tuberculoma. The only question of differentiation arises in the consideration of such functional disturbances as fainting or hysteria, and in the consideration of pleural shock. We might also mention in passing the possibility of the concomitant occurrence of a cerebral vascular accident simulating air embolism; also, when diagnostic or therapeutic pneumothorax is performed for such pulmonary diseases as abscess, bronchiectasis or tumor, a cerebral embolus (not air embolus) might result.

The question of pleural shock deserves separate consideration. Pleural shock (pleural reflex, pleural eclampsia, pleural epilepsy) is a syndrome caused by irritation or puncture of the pleura and is characterized by the appearance of a group of symptoms not unlike those of air embolism. It occurs almost only when the pleura is healthy or only slightly diseased. Forlanini [11] believed that all severe reactions were pleural shock, not air embolism. Many cases of so-called pleural shock are vague and ill defined and are much more accurately interpreted as fainting spells, as the effect of extreme nervousness, as an excessive reaction to pain, and in cases in which there appear focal neurologic signs, as air embolism. Wever [9] showed that small amounts of air injected into the carotids of dogs produced the symptoms of "pleural shock," while larger doses produced true air embolism. We have already seen the mechanism whereby air embolism may occur without the injection of air, and it has been demonstrated [11] that cerebral embolus may complicate pleural lavage. There are, however, apparently authenticated cases of pleural shock in which the syndrome was repeated on each successive puncture of the pleura.[7] This would certainly seem extremely improbable if air embolism were the cause. Symptoms may appear while the pleura is being punctured or while the needle is being withdrawn. The attacks, if recurrent, often tend to become worse with each successive puncture. Any case presenting focal neurologic signs or evidence of embolism elsewhere (air in the retinal vessels or focal blanching of the skin) is certainly air embolism. Similarly, if the phenomenon occurs immediately on the injection of air, or when the needle is stationary, or when the pleura is known to be badly diseased and thickened, or when evidence of vascular puncture is secured by immediate hemoptysis, or when blood is welling up through the needle or is found on the end of the needle or stylet, air embolism is far more probable. In some cases the differentiation is impossible. The indicated therapy is the same in the two cases. If pleural shock is definitely diagnosed and recurs even once, such a patient should not receive further attempts at pneumothorax.

SUMMARY

Air embolism is a definite, diagnosable, clinical entity. It is logically divided into two groups, one in which air enters one of the peripheral veins and the other in which air enters the pulmonary circuit. In the first group, symptoms arise from the presence of air in the right side of the heart, and in the second, from the presence of air in the cerebral vessels.

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INFECTION OF THE URINARY TRACT IN DIABETES

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The inherent susceptibility of the diabetic patient to infection is not only manifested by the frequency with which skin infections are found but further exemplified in the high incidence and serious character of infection of the urinary tract. Almost one in every five diabetic patients coming to autopsy at the New England Deaconess Hospital since 1919 has shown some infectious process in the urinary tract. In 196, purulent infection of the urinary tract was present in thirty-five, or 18 per cent. All other types of nephritis and specific infections have been excluded. This high incidence is not confined to autopsy material, for such infections are frequently found in ward patients.

The tables show the distribution of infection of the urinary tract in the thirty-five patients who came to postmortem examination. In this series there were twenty females and fifteen males. The proportion of females to males in the entire 196 cases is approximately the same, and the proportionate incidence of urinary tract infection is about equal for the two sexes.

The average age at death was 58.3 years. The youngest patient was a youth aged 19, admitted to the hospital in acidosis with right paranephric abscess, which ruptured through the diaphragm into the right thoracic cavity. The oldest patient was a woman, aged 77, admitted with occlusion of the femoral artery and left pyelitis. While some of the most extensive infections occurred in younger individuals, the incidence of infections of the urinary tract was greatest in persons past middle life.

The average duration of diabetes for the entire group was 9.7 years, owing to the inclusion of several cases of extremely long duration. The striking feature was the presence of severe kidney or bladder infection in cases with a relatively short duration of diabetes; seventeen of the thirty-five patients had diabetes for less than five years, and ten had diabetes less than three years. The increased susceptibility to infection in the diabetic patient must originate soon after the onset of the disease, as is demonstrated not only in this group but also in those patients in whom the onset of diabetes is soon followed by skin infections.

Infection of the urinary tract in the autopsy series fell into three main etiologic groups: (1) hematogenous, (2) ascending and (3) unknown.

Group 1 provided by far the largest number of patients, including twenty-six cases, or an incidence of 74 per cent of the thirty-five cases. This is undoubtedly accounted for in part by the presence of severe infections with virulent organisms, especially staphylococci and streptococci. It seems apparent that an analysis of ward patients would reveal a higher incidence of ascending urinary infections with Bacillus coli.

A wide variety of associated infections is seen in table 1, in which the term "skin infection" is used to include furuncles, carbuncles, subcutaneous abscesses and infections associated with peripheral gangrene. Eighteen of the cases fall into this class (3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 16, 18, 19, 21, 22, 24, 21*b* and 25). Staphylococci and streptococci were the most frequent bacterial species found in the skin infections, the former predominating. In this group hematogenous dissemination of bacteria to the kidneys was the usual mechanism of infection. Staphylococci were demonstrated in the blood in ten cases before death (3, 4, 5, 8, 13, 16, 21, 19, 22 and 9). Streptococci were demonstrated in the blood in one case before death (6), and pathologic changes consistent with streptococcic septicemia were found in another (25). Death was ascribed to sepsis in two other cases in this group, and, although laboratory confirmation was lacking, bacteremia was probably present (cases 11 and 16).

Other infections in group 1 include appendical abscess, two cases (1 and 14); primary pneumonia, two cases (2 and 23); bronchiectatic abscesses, one case (12); prostatic abscess, one case (15); otitis media, one case (17), and periurethral abscess, one case (20). In this group of cases streptococci were demonstrated in the blood in one case (23) and staphylococci in one case (15). Postmortem evidence of septicemia was observed in one case (14). Ten of the twenty cases with renal infection showed gross renal abscesses, an incidence consistent with the nature of the invading organisms.

Five cases of cystitis without renal infection occurred in this group, four of which were associated with chronic infections elsewhere (16, 17, 18 and 25) and one with a subacute process (1). No obstructive or static cause for the cystitis was demonstrated at autopsy. One patient died from metastatic abscesses from a gangrenous leg, another from toxemia secondary to a gangrenous leg, another from septicemia secondary to a gangrenous leg, another from pneumococcic meningitis and another from generalized peritonitis. Several of the latter cases might have been included in the "unknown etiologic group," but they were included in group 1 since peripheral infection was definitely present and evidence of toxemia or septicemia existed in the majority.

Ascending urinary tract infection was not commonly observed in the autopsies, as is seen in table 2. The majority at autopsy showed no obstructive lesion in the urinary tract. In three cases the obstruction was due to calculi, in one to urethral stricture and in one to prostatic hypertrophy. Two of the patients with calculi had typical ureteral colic and one passed "gravel." Only one case in the entire series showed urinary tract infection secondary to prostatic enlargement. Considering the fact that the average age at death for the males in the autopsy series was over 60 years, this seems unusual. However, among hospitalized diabetic patients, infection of the urinary tract secondary to prostatic obstruction is relatively rare.

An analysis of ward patients reveals a higher incidence of Bacillus coli infection, following obstructive lesions, catheterizations, and conditions producing stasis in the bladder; in the latter instance cystoceles in female patients constitute a not generally recognized reservoir of infection.

In three cases of pyelitis without pathologic evidence of parenchymal renal infiltration, cystitis was absent in two (6 and 11). All these cases were associated with infection elsewhere in the body, one with gangrene of the lower extremity, one with bronchiectatic abscesses, and one with a carbuncle; the last patient died of

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staphylococcic septicemia. Hematogenous implantation of bacteria was the most likely source for the renal infection.

Group 3 constitutes the most baffling one in the series in that no known etiologic factor could be demonstrated at autopsy. This group makes up a considerable portion of hospitalized cases and gives the clinician and urologist no end of concern in that there is no surety in the frequently mild and usually symptomless cases that invasion and destruction of the renal parenchyma is not taking place.

Five such cases are represented in table 3 (31, 32, 33, 34 and 35). In four of these cases renal infection was the immediate cause of death (31, 33, 34 and 35) and possibly in the other case provided an indirect cause of death. Two of these cases showed evidence of septicemia at autopsy secondary to the renal infection (34 and 35). No symptoms pointing to renal infection were present in any of these cases except one in which pain in the side was noted two weeks before hospital admission. Two of these cases were admitted to the hospital with unexplained fever and each subsequently showed local kidney tenderness to bimanual palpation.

A small but interesting group of patients constitute a clinical entity not yet confirmed by pathologic study.

TABLE 1.—*Hematogenous Infection of the Urinary Tract*

Case	Sex	Age	Duration of Diabetes, Years	Peripheral Infection	Pathologic Lesions
1	♀	53	14.6	Appendical abscess, peritonitis	Fibrinous cystitis
2	♀	56	4.0	Bronchopneumonia	Pyelonephritis, perinephritic abscess
3	♂	48	3.3	Furunele of shoulder	Pyelonephritis, renal abscesses
4	♀	58	4.2	Infected gangrenous toe	Acute cystitis
5	♀	53	2.1	Labial abscess	Pyelonephritis, renal abscesses
6	♂	57	3.0	Carbuncle of neck	Left pyelitis
7	♀	77	13.2	Bronchopneumonia, femoral occlusion, gangrene	Pyelonephritis, renal abscesses
8	♂	56	23.2	Carbuncle of neck	Pyelitis, cystitis
9	♀	63	0.7	Carbuncle	Pyelonephritis, acute cystitis
10	♂	54	1.1	Gas bacillus gangrene	Pyelonephritis, renal abscesses, cystitis
11	♂	70	15.5	Infection of finger	Bilateral pyelitis
12	♀	43	1.3	Bronchiectatic abscess	Pyelonephritis, renal abscesses
13	♀	55	3.3	Infection of hand	Pyelonephritis, renal abscesses, cystitis
14	♀	67	10.4	Appendical abscess	Pyelonephritis, renal abscesses, cystitis
15	♂	61	2.1	Prostatic abscess	Pyelonephritis, renal abscesses
16	♀	52	5.9	Gangrene of foot	Chronic cystitis
17	♀	69	1.8	Otitis media meningitis	Cystitis
18	♂	73	16.9	Gangrene of leg	Cystitis
19	♂	68	25.4	Gangrene of leg	Pyelonephritis
20	♂	75	0.4	Periurethral abscess	Pyelonephritis, cystitis
21	♀	76	19.7	Cellulitis of scalp	Pyelonephritis, renal abscesses, cystitis
22	♂	72	18.9	Carbuncle of back	Pyelonephritis, renal abscesses
23	♀	68	0.1	Pneumonia empyema	Right pyonephrosis, pyo-ureter, cystitis
24	♀	24	11.3	Subcutaneous abscesses	Pyelonephritis, amyloidosis, cystitis
25	♂	72	31.2	Gangrene of foot	Hemorrhagic cystitis

These patients have unexplained paralysis of the bladder, usually associated with absence or diminution of patellar and achilles tendon reflexes, disturbances in peripheral sensation and sometimes peripheral polyneuritis. Motor weakness and trophic lesions are uncommon. Those cases associated with motor weakness have frequently been described as tabes peripherica diabetica and pseudotabes diabetica. The coexistence of arteriosclerosis in such cases is common. Degenerative changes, probably on an arteriosclerotic basis, have been found by Warren in the spinal cords of some diabetic patients. One such case with unexplained bladder paralysis and urinary tract infection came to autopsy but the spinal cord showed no degenerative changes; however, extreme generalized arteriosclerosis was found.

Woltman and Wilder [1] reviewed forty-two cases in which neuropathologic changes were described in diabetic patients, in twenty-eight of which the spinal cord was examined. They do not believe that the degenerative cord changes were of the type found in pernicious anemia, as described by Sandmeyer,[2] Leyden and Goldscheider [3] and Naunyn.[4] The same authors presented ten cases of diabetic neuritis, with postmortem neuropathologic studies in three cases. The degenerative changes noted in the three spinal cords were slight, and most of it could be explained on a basis of senility and arteriosclerosis. They believe that the lateral columns are seldom, if ever, involved in diabetes and that the mechanism of the production of the lesions reported as occurring in the posterior columns must be different from those which occur in pernicious anemia. The recent literature on neuropathologic changes observed in diabetes is scant, especially as regards degenerative cord changes. Until more of these cases have been studied at autopsy, the etiology of this type of bladder paralysis will remain obscure.

TABLE 2.—*Ascending Infections with Obstruction*

Case	Sex	Age	Duration of Diabetes, Years	Obstructive Lesion	Pathologic Lesions
26	♀	63	28.1	Left renal calculus	Left hydronephrosis, pyelonephritis
27	♂	63	3.3	Left ureteral calculus	Left pyonephrosis, pyo-ureter, prostatitis
28	♂	69	6.9	Prostatic hypertrophy	Cystitis
29	♂	46	9.5	Urethral stricture	Pyelonephritis, cystitis
30	♀	46	0.1	Left renal calculi	Left pyonephrosis and pyo-ureter

In table 4 are listed three patients admitted in diabetic coma and four in acidosis. In three of these cases urinary tract infection was of a relatively acute type (2, 5 and 32). On the first admission of case 35, in acidosis, white blood cells appeared in the urine, and in two months death had occurred from septicemia secondary to multiple renal abscesses. Septicemia occurred in two other cases (5 and 21) and active urinary tract infection was present in all of these coma cases.

COMMENT

The frequency of urinary tract infection in diabetes not only is demonstrated in an analysis of 196 autopsies on diabetic patients since 1919 but is found to be of common occurrence in hospitalized patients. The nature of the disease and the inherent susceptibility of the tissues to infection in the diabetic patient make him an easy prey to urinary tract infection.

Infection of the urinary tract is most apt to occur in the uncontrolled or inadequately controlled case of diabetes. This is particularly true when the urinary tract infection was secondary to infection elsewhere in

1. Woltman, H. W., and Wilder, R. M.: Diabetes Mellitus: Pathological Changes in the Spinal Cord and Peripheral Nerves, Arch. Int. Med. **44**: 576-603 (Oct.) 1929.
2. Sandmeyer, Wilhelm: Beiträge zur pathologischen Anatomie des Diabetes Mellitus, Deutsches Arch. f. klin. Med. **50**: 381, 1892.
3. Leyden and Goldscheider: Die Erkrankungen des Ruckenmarks und der Medulla Oblongata, in Nothnagel, Herman: Specielle Pathologie und Therapie, Vienna, Hölder-Pichler-Tempsky A.-G. **10**: 500, 1900.
4. Naunyn, Bernard: Der Diabetes mellitus, in Nothnagel, Herman: Specielle Pathologie und Therapie, Vienna, Hölder-Pichler-Tempsky A.-G. **7**: 251, 1900.

the body, especially in cases of skin infection in the uncontrolled case of diabetes with subsequent development of bacteremia. As an example, case 24 might be cited; a woman, aged 24, with uncontrolled diabetes of ten years' duration developed skin and subcutaneous abscesses, which led to severe bilateral pyelonephritis and terminal meningitis. That this is not an infallible rule, however, is seen in hospital patients who developed ascending urinary tract infections in the presence of urinary stasis, even when the diabetes has been under fairly good control.

The paucity of symptoms in these autopsies and in those admitted to the hospital wards, even with severe and extensive urinary tract infection, is striking. Some of our most severe cases have presented a noticeable absence of symptoms referable to the urinary tract. Patient 35 was admitted recently to the hospital with the symptoms and signs of encephalitis. No symptoms were present that suggested urinary tract infection, and the presence of a few leukocytes in the uncatheterized urine was regarded as of no significance. On readmission two months later the left kidney was enlarged and tender, and marked pyuria was found. Septicopyemia developed and the patient died. Autopsy revealed severe bilateral pyelonephritis with multiple renal abscesses and marked purulent cystitis.

Ketonuria has been shown by Rector and Wheeler [5] to have a most striking sedative action on the bladder mucosa, despite the fact that the urine shows as many bacteria and pus cells as before ketosis developed. The relative absence of symptoms in our diabetic patients with urinary tract infection and acidosis may possibly be explained on this basis, since many of our patients are admitted to the hospital with both conditions. However, the absence of symptoms is not thus explained in the group without acidosis. Here the diabetes itself may be the primary factor, especially since it is known that sensory disturbance, even anesthesia, is not uncommon in the patient with diabetes. This is particularly realized when one sees minor surgery being done without anesthesia on the feet of some diabetic patients. First and second degree burns of the skin from local application of excessive heat, and gangrene, occurring from baking the feet in an oven at a sufficient temperature to produce destruction of the skin, are not infrequently observed. Unexplained fever in our diabetic patients has led to the discovery of "silent urinary tract infections" by repeated microscopic examinations of the urine.

TABLE 3.—*Infections of the Urinary Tract with Unknown Etiology*

Case	Sex	Age	Duration of Diabetes, Years	Pathologic Lesions
31	♂	19	0.9	Right paranephritic abscess, rupture into thoracic cavity
32	♀	47	3.6	Bilateral pyelonephritis
33	♀	31	7.6	Pyelonephritis, renal abscesses, cystitis
34	♀	72	12.5	Pyelonephritis, renal abscesses, cystitis
35	♀	65	18.1	Pyelonephritis, renal abscesses, cystitis

When mild symptoms referable to the urinary tract are present in the diabetic patient they may frequently be mistaken for those of diabetes per se by the patient and the physician. Not uncommonly, during periods of urinary tract infection, hyperglycemia becomes more marked and the presence in the urine of a large quantity of sugar is accepted as the cause for the frequency of urination, dysuria, nocturia and local irritation. It is important to emphasize that the analysis of the diabetic urine is not complete without microscopic examination of the sediment.

It is the practice in the New England Deaconess Hospital to have a complete examination of the urine made in every case at least once a week. Repeated microscopic examinations of the urine of patients with unexplained fever has frequently led to an early diagnosis of urinary tract infections.

TABLE 4.—*Cases of Diabetic Coma and Renal Infection and of Acidosis Without Actual Coma*

Case	Sex	Age	Duration of Diabetes, Years	Clinical	Autopsy
			Diabetic Coma and Renal Infection		
2	♀	56	4.0	Cold, bronchopneumonia	Pyelonephritis, acute cystitis
5	♀	53	2.1	Peripheral abscesses	Acute focal nephritis, cystitis
32	♀	47	3.6	.....	Pyelonephritis
			Acidosis Without Actual Coma		
17	♀	69	....	.....	Cystitis
21	♀	76	....	.....	Pyelonephritis
35	♀	65	....	.....	Pyelonephritis, renal abscesses, cystitis
31	♂	19	....	.....	Paranephritic abscess

Physical examination is commonly negative in these cases, but, when renal infection has occurred, kidney enlargement may sometimes be discovered. Local tenderness over the renal areas is often present on bimanual examination. Fever with or without kidney enlargement, but accompanied by local kidney tenderness on bimanual examination even in the absence of symptoms, should direct attention to the urinary tract. The chronicity of urinary tract infection with the tendency to acute exacerbations is an unfortunate feature of the disease in some cases of diabetes. In the autopsy series, pus was known to be continuously present in the urine in one case during a period of eighteen years. This is likewise seen in the clinical cases when the patient survived sepsis secondary to infection elsewhere in the body, only to be left with chronic debilitating renal infection (two cases) which, if it does not eventually directly lead to death, indirectly predisposes the patient to death by increasing his susceptibility to other types of infection.

With the increased susceptibility of the diabetic patient to infection, one is constantly in a quandary as to whether one should catheterize the patient and, if so, when. In cases of an emergency nature, such as acute retention, there may be no alternative. When possible, we have refrained from catheterizing our patients for fear of urinary tract infection. Following operations or conditions associated with inability of the patient to void, we have endeavored whenever possible to control the insulin dosage by frequent micro blood sugar determinations until the patient is able to void voluntarily. When catheterization is not of an emergency nature and is done solely for diagnostic purposes, it has been our practice to administer sodium acid phosphate and methenamine for forty-eight hours before and at least forty-eight hours after catheterization. In the treatment of diabetic coma, catheterization is avoided if possible. Sometimes it is necessary and in those cases a retention catheter is preferred to frequent catheterizations.

5. Rector, J. M., and Wheeler, W. E.: The Use of the Ketogenic Diet in Chronic Pyuria, New England J. Med. **211**: 143-147 (July 26) 1934.

The management of urinary tract infection in the diabetic patient should be directed toward general and local treatment. The most important factor under general treatment is the control of the diabetes. The influence of uncontrolled diabetes on infection and of infection on diabetes is too well known to merit further discussion. The source of infection should be eliminated if possible. Incision and adequate drainage of furuncles, abscesses and carbuncles at the optimal time is of the greatest possible importance. Proper surgical care of the septic foot is required. In spite of all precautions, invasion of the blood stream may occur and hematogenous dissemination to the kidneys may result. The not infrequent admission of emergency surgical cases of long duration, in which operation has not been done because of diabetes, is often inexcusable. The treatment of anemia or any other concomitant factor that tends to lower bodily resistance is likewise important.

Local treatment usually requires the cooperation of a skilled urologist. With the aid of Dr. Harvard Crabtree, these patients are usually given a trial with sodium acid phosphate and methenamine, and sometimes with phenylazo - 2 - 6 - diamino-pyridine monohydrochloride; fluids are forced and the patient is observed. In pyelitis and pyelonephritis, when improvement is not manifested in a few days, drainage and irrigation is performed by retrograde catheterization. Catheterization is avoided whenever possible. Surgery for perirenal abscess, when indicated, has been done. The tendency for abscess to occur in the kidneys of diabetic patients with staphylococci and streptococcic infections has been noted in the autopsy series. Only rarely, however, is there an indication for surgery, since the lesions are usually bilateral. Bladder irrigations are performed in cases of protracted cystitis and in some cases of acute hemorrhagic cystitis. Response to treatment in the majority of these cases is slow. Frequent microscopic examination and culture of the urine are the best criteria to determine the extent of the infection and the adequacy and duration of treatment.

Since the recent discovery by Helmholz[6] that ketonuria exerts a bacteriostatic or bactericidal effect on certain types of bacteria, especially B. coli, there has been an increasing number of cases reported of the treatment of urinary tract infection by ketonuria, especially in England and the United States. Fuller[7] attributes this bacteriostatic or bactericidal effect of ketonuric urine to the presence of beta-oxybutyric acid, which ordinarily constitutes from 70 to 75 per cent of the ketone bodies; he showed that this effect increased in proportion to the acidity of the urine. This form of treatment is particularly efficient in infections due to B. coli. Acidification of the urine to the same p_H values does not produce the same bactericidal effect. The average reaction of the urine of a patient on a mixed diet is between p_H 6.0 and 7.0. According to Schohl and Janney,[8] optimal growth of B. coli occurs at these values, but they are inhibited from growing in the urine at a p_H of from 4.6 to 5.0 on the acid side and from 9.2 to 9.6 on the alkaline side. According to Band and his associates,[9] a p_H of 4.8 can sometimes be reached in the urine in a ketogenic diet, at which point the growth of B. coli is stopped. Rector and Wheeler[5] advocate the restriction of the fluid intake in the patient on this regimen.

The production of ketosis in the treatment of urinary tract infection is a distinct advancement in the therapy of this condition. We have not found in the literature reports of any diabetic cases in which this treatment was undertaken. The inadequacy of present-day therapy in this type of infection might justify its use in selected cases. The concurrence of urinary tract infection with acidosis and coma in some of our cases may be due to the nature of the invading organism and to increased tissue susceptibility to infection in the diabetic patient. How much ketosis would offset the latter factor could be determined only by actual trial. We have not seen many reports on the carbon dioxide combining power of the blood in these cases, but it would be advisable to follow this closely in the diabetic case. Strict hospital observation would be required in this form of therapy for diabetes. In diabetic patients the presence of infection and restriction of fluid intake may act unfavorably on the major disease.

The clinical and autopsy data of two illustrative cases are cited:

CASE 35.—A woman, aged 65, who had had diabetes for 18.1 years, was admitted to the hospital early in February 1934, after neglected treatment for ten years, with low-grade fever, acidosis and symptoms suggestive of encephalitis. On admission the blood sugar was 0.46 per cent, plasma carbon dioxide combining power, 36 volumes per cent, and nonprotein nitrogen 45 mg.; only a few white cells were found in the urine. The spinal fluid Wassermann and colloidal gold reactions were negative. In the middle of February the urine showed a considerable number of white cells, but this was not considered to be a cause of her symptoms. During this time no symptoms referable to the urinary tract were present. The average diet was carbohydrate, 100 Gm., protein, 30 Gm., and fat, 50 Gm., relatively low figures because of the condition of the patient. The insulin dosage varied from 30 to 50 units daily. She was dismissed from the hospital the latter part of February, presumably improved.

She was readmitted in April with an abscess of the left thigh, which was incised and drained. The urine contained large numbers of white blood cells, and the left kidney was large and tender on palpation. The nonprotein nitrogen had risen to 99 mg. per hundred cubic centimeters. Retrograde catheterization revealed pus in both kidneys, more marked in the left. She continued to pursue a downhill course despite all treatment, and a metastatic infection of the left eye developed. Clinical and laboratory examinations suggested a large abscess of the left kidney and she was operated on in May. Death occurred within twenty-four hours following the operation. The nonprotein nitrogen at the time of death was 57 mg. per hundred cubic centimeters.

Autopsy revealed evidence of septicemia with extensive purulent bilateral pyelonephritis with multiple renal abscesses and purulent cystitis. The abscess in the left kidney, drained at the time of operation, measured 3 cm. in diameter.

CASE 24.—A white woman, aged 25, with a duration of diabetes of 11.3 years, had been in diabetic coma twice and acidosis eight times owing to neglect on her part. She had been admitted to the hospital five times for incision and drainage of abscesses. Many white blood cells were seen in the urine in April and May 1929, but no symptoms were present referable to the urinary tract. She was readmitted in June 1933, with a perirenal abscess. Physical examination revealed tenderness over both kidneys. The urine showed many white blood cells. She had repeated chills and high fever.

Retrograde catheterization was done, which revealed bilateral pyelonephritis. The patient was in the hospital from June to December 1933, during which time she was treated for the urinary tract infection. Repeated blood transfusions were

6. Helmholz, H. F.: The Ketogenic Diet in the Treatment of Pyuria of Children with Anomalies of the Urinary Tract, Proc. Staff Meet., Mayo Clin. **6**: 609 (Oct. 14) 1931; Experimental Studies in Urinary Infections of the Bacillary Type, J. Urol. **31**: 173 (Feb.) 1934.

7. Fuller, A. T.: The Ketogenic Diet—The Nature of the Bactericidal Agent, Lancet **1**: 855 (April 22) 1933.

8. Schohl and Janney, quoted by Clark, A. L.: Escherichia Coli Bacilluria Under Ketogenic Treatment, Proc. Staff Meet., Mayo Clin. **6**: 605 (Oct. 14) 1931.

9. Band B.; Dunlop, D. M., and Dick, I. L.: Chronic Pyelocystitis with Particular Reference to the Ketogenic Diet Treatment, Proc. Roy. Soc. Med. **26**: 217 (Jan.) 1933.

necessary in an effort to combat constant severe secondary anemia. The patient was expected to die of septicemia during this course in the hospital. In December 1933 she was improved and was dismissed from the hospital.

She was readmitted to the hospital in January 1934 with bilateral otitis media, which seemed to respond well to paracentesis. In February a perianal abscess developed which required incision and drainage. She was dismissed from the hospital in February and returned again in March with mastoiditis. Meningitis developed and she died.

Autopsy revealed that the immediate cause of death was pneumococcic meningitis. The kidneys showed bilateral pyelonephritis with evidence of extensive repair and diffuse renal amyloidosis. Purulent cystitis was also present. The prolonged renal infection was undoubtedly the indirect cause of death, leading to lowered resistance and increased susceptibility to infection.

These two cases taught us a great deal. Both patients were women, at the opposite ends of life. Both had diabetes of long duration and each neglected her treatment for long periods. Neither was admitted for urinary tract infection, and in the first case the diagnosis was missed on the initial admission. Symptoms that would attract attention to the urinary tract were absent in each. Etiologic factors in the first case were not known. In the second, renal infection very likely occurred secondary to multiple peripheral abscesses. The course of the disease in the first was rapid, in the latter case slow, an increased number of white cells in the urine having been noted four years prior to her admission in June 1933. Treatment consisted of forcing of fluid, acidification of the urine, use of urinary antiseptics, retrograde catheterization with irrigations and frequent blood transfusions. In the first case treatment was of no avail. In the second, while extensive renal repair was seen at autopsy and constant treatment was carried out under hospital supervision for seven months, the patient succumbed to an intercurrent infection.

SUMMARY

In a clinical and pathologic study of the incidence of urinary tract infection in 196 diabetic cases, 18 per cent revealed at autopsy evidence of urinary tract infection, which could be divided into three main groups: hematogenous, ascending and unknown. Seventy per cent of the cases fell into the hematogenous group, in which infection of the urinary tract was secondary to infection elsewhere in the body. Ascending infection was secondary to obstructive lesions in the urinary tract. In a small group of patients in whom severe renal infection was present, it was impossible to ascertain the etiologic factors.

CONCLUSIONS

1. Urinary tract infection commonly occurs as a complication of diabetes. This is especially true in cases of uncontrolled or inadequately controlled diabetes.

2. Symptoms referable to the urinary tract are frequently absent in these cases.

3. Catheterization is sometimes responsible for the development of urinary tract infection.

4. The tendency of the urinary tract infections in diabetic patients to recurrence and chronicity is common.

5. The occurrence of unexplained fever in diabetic patients should prompt an investigation of the possibility of urinary tract infection.

81 Bay State Road.

ILEUS ASSOCIATED WITH TRANSIENT RENAL INSUFFICIENCY

A TRUE ENTERORENAL SYNDROME

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AND
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We have observed a group of elderly patients who had signs and symptoms of obstruction of the colon, which were accompanied by an elevation of the blood urea and a decreased urinary output. The onset of the signs and symptoms of obstruction of the lower part of the intestine in these cases was sudden enough to make it urgent to decide whether or not surgical treatment should be advised. We are reporting the pertinent facts in the history, examination, laboratory data and progress in ten such cases, followed by a discussion of the data relating to diagnosis, etiology and treatment.

REPORT OF CASES

CASE 1.—A man, aged 54, was admitted directly to the hospital on account of abdominal distention, dyspnea and discomfort. Ten years prior to his admission to the hospital he had been operated on for disease of the gallbladder. Following the operation, a postoperative hernia had developed. However, since the operation on the gallbladder he had had attacks of abdominal distention and discomfort, which would last for a few hours and would disappear after he had taken a cathartic and an enema. During the past three weeks these remedial measures had failed and the distention and abdominal discomfort had persisted.

On general examination he was found to be well developed and somewhat overweight. The temperature was 101 F. The skin and tongue were dry in appearance. The heart was enlarged and there was a regular rate and rhythm to the heart sounds. The lungs contained musical râles throughout. There was a moderate degree of arteriosclerosis. The abdomen was rather distended and tender. There were no palpable masses. The rectal examination did not reveal anything abnormal.

To avoid repetition, the blood pressures, blood chemistry and urinalysis of this case, as well as those which follow, are given in the accompanying table.

Hot stupes were applied to the abdomen, 3,000 cc. or more of fluids was administered by mouth and, if necessary, these measures were supplemented by intravenous injections and warm rectal irrigations with physiologic solution of sodium chloride. During the first two days the urinary output was less than 500 cc. daily. However, at the end of five days the urinary output was within normal limits; the blood urea had dropped from 88 to 28 mg. per hundred cubic centimeters of whole blood, and daily bowel movements had been established.

CASE 2.—A man, aged 56, had generally been healthy except for an attack of abdominal pain and distention two years prior to his admission to the hospital. At the time of this attack the abdomen had been explored surgically and only "adhesions" had been found. The convalescence had been normal and he had had no further trouble until three days before his admission to the hospital after he registered at the clinic. Four days before his admission he had had stools that had been watery and explosive in character. The next day the abdomen had become distended and he had had colicky pains in the abdomen, which had become worse. Two days after onset of the present illness, enemas had failed to effect a bowel movement or the passage of flatus. However, just before his admission to the hospital he had passed a small amount of flatus.

Physical examination disclosed that the patient was well developed and well nourished. There was no fever. The abdomen was moderately distended and no masses could be

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palpated. Rectal examination did not disclose anything unusual. There was a moderate degree of arteriosclerosis.

Hot abdominal stupes were applied continuously. The fluid intake was kept at 3,000 cc. or more, and a 10 per cent solution of dextrose in physiologic solution of sodium chloride was administered intravenously when necessary. Warm rectal irrigations were given twice daily. At the end of five days of such treatment, the blood urea had dropped from 52 to 36 mg. per hundred cubic centimeters of whole blood. Roentgenologic studies of the gastro-intestinal tract did not disclose anything abnormal.

CASE 3.—A priest, aged 58, was admitted directly to the hospital. He had had good health until two years before, when he had had an acute attack of appendicitis. Appendectomy had been performed and he had made an uneventful recovery. He had been well for ten months and then he had begun to have continuous pain in the upper part of the abdomen. He was not certain but thought this abdominal pain had been made worse by exercise. Occasionally he had had some nausea and vomiting. These difficulties had cleared up so that during the six months prior to the present illness he had not had any discomfort. One week before his admission to the hospital he had begun to have abdominal distention. He had taken a mild purgative, which had been ineffective. The following day he had taken an enema, which had returned clear. After he had taken the enema, the abdomen had become more distended. On general examination the patient was found to be well developed and healthy appearing. The pupils reacted to light and in accommodation. The tongue was dry and the thyroid gland was not enlarged. He did not have any fever. The heart and lungs were normal. The abdomen was moderately distended but there were no palpable masses. Rectal examination revealed nothing unusual. There was a moderate degree of arteriosclerosis.

Exploratory laparotomy was performed immediately but no obstruction was found. There was considerable dilatation of the ascending and transverse colon. The gallbladder was filled with stones and was removed.

The patient was seen six years later and had been well until recently, when a frank renal insufficiency had developed.

CASE 4.—A man, aged 61, had had good health until two weeks before the onset of the present illness, when he had had a mild attack of abdominal distention, which had lasted only an hour or two and which had not been followed by any apparent sequelae. On the day before his admission to the hospital he had eaten a light breakfast and had had a normal bowel movement. About one hour later he had begun to belch and the abdomen had become distended and had caused discomfort. The discomfort soon had become generalized and had been accompanied by crampy pains. The abdominal distention had increased and had been accompanied by vomiting. The family physician had given enemas without producing the desired results. The abdomen had become more distended.

On general examination he was found to be obese and he appeared rather ill and drowsy. The drowsiness was apparently the result of a hypodermic injection of morphine. There was no fever. The heart rate was about 100 beats per minute; however, the pulse was regular and of good quality. The heart was somewhat enlarged; there was a systolic murmur, which was best heard in the mitral area. A moderate degree of arteriosclerosis was present. The abdomen was greatly distended but there were no palpable masses. An exploratory laparotomy was performed and no evidence of obstruction was found. The lower part of the ileum and first part of the colon were dilated.

CASE 5.—A man, aged 65, had had good health until about a year before, when he had begun to have a "dragging" pain in the left lower quadrant of the abdomen and difficulty in obtaining a daily bowel movement. It had been necessary to resort to purgatives, and continuously increasing dosage had been necessary to get results. During the past eight weeks he had had intermittent attacks of abdominal distention and discomfort. Each successive attack had become more severe until the distention and discomfort had been present constantly.

Physical examination revealed that the patient was large and had a rounded, distended abdomen. There was definite tenderness of the abdomen, but no masses were discovered. The tongue was dry and coated and there was a foul odor to the breath. Examination of the eyes revealed arcus senilis. There was no fever. There was a moderate degree of arteriosclerosis. The heart and lungs were within normal limits. The rectum contained hard, fecal material, which was broken up and removed digitally. Roentgenologic studies of the gastro-intestinal tract did not disclose anything abnormal.

Hot abdominal stupes were applied; warm rectal irrigations were given, and the fluid intake was maintained at 3,000 or more cubic centimeters daily. During the first three days the urinary output was below 1,000 cc. for each twenty-four hours. Seven days after his admission to the hospital, the blood urea had fallen from 71 to 26 mg. per hundred cubic centimeters of whole blood. Five months later he apparently was in good health.

CASE 6.—A man, aged 73, who had abdominal pain and distention, hiccup and anuria, was admitted directly to the hospital, Aug. 1, 1934. In the past he had had good health. June 29, 1934, he had submitted to repair of bilateral inguinal hernia. He had received a daily enema for the first ten days after operation, and since this time he had been unable to secure an adequate bowel movement without the aid of an enema. Since July 28 he had been unable to obtain any fecal material with the enemas. July 29 the abdomen had been "bloated," and following the evening meal there had been cramps in the lower part of the abdomen, and occasional vomiting. By the following day the abdominal pain and distention and the vomiting had increased considerably and he had been unable to void urine. The physician had been unable to obtain urine with a metal catheter or to obtain flatus or feces with an enema, which had been supervised personally. Cramps in the legs were at times rather pronounced.

The patient was well developed and did not have any fever. The pulse rate was 108 beats per minute. There was a moderate degree of arteriosclerosis. The systolic blood pressure was 105 mm. of mercury and the diastolic blood pressure 80 mm. There was hiccuping and the abdomen was distended and tender, but there were no masses in the abdomen. Examination of the rectum did not reveal anything abnormal.

Hot abdominal stupes were applied, warm saline irrigations given, and the fluids kept to 3,000 cc. daily. A diet low in residue was given. Ten days after his admission to the hos-

Laboratory Data in Cases of Ileus Associated with Transient Renal Insufficiency

			Blood Pressure Mm. of Mercury			Blood				Urine		
Case	Age	Sex	Systolic	Diastolic	Arteriosclerosis	Urea, Mg. per 100 Cc. of Whole Blood	Chlorides, Mg. per 100 Cc. of Plasma	Carbon Dioxide Combining Power, Cc. per 100 Cc. of Plasma	Hemoglobin	Albumin	Pus	Erythrocytes
1	54	♂	160	110	Moderate	88	609	62.0	90	1	0	0
2	56	♂	115	80	Moderate	52	691	59.8	84	1	2	0
3	58	♂	110	80	Moderate	64	610	59.1	78	1	1	0
4	61	♂	125	90	Moderate	84	584	47.5	96	2	1	0
5	65	♂	175	120	Moderate	71	615	50.1	78	1	1	1
6	73	♂	105	80	Moderate	108	614	56.0	84	2	2	0
7	66	♂	140	90	Moderate	60	620	50.1	66	1	1	0
8	72	♀	145	65	Moderate	126	620	59.2	66	2	3	1
9	82	♂	225	130	Advanced	62	610	62.0	72	2	3	1
10	84	♂	160	100	Advanced	54	530	50.4	78	2	2	0

pital, the urinary output had increased from less than 800 cc. daily to 2,500 cc. in each twenty-four hours. The blood urea had dropped from 60 to 30 mg. per hundred cubic centimeters of whole blood. Roentgenologic studies of the gastro-intestinal tract did not reveal anything abnormal. Six months later he was in good general health.

CASE 7.—A man, aged 66, had been in good health until one year before examination, when he had had some "gas on the stomach." For six months he had had colicky pains in the region of the umbilicus and he had felt that cathartics were necessary. For five months there had been daily distress in the lower part of the abdomen. The appetite had been poor and he had lost weight. In spite of daily cathartics, the constipation had become more obstinate.

The patient was poorly nourished. He did not have any fever. The pupils reacted to light and in accommodation. The heart was not enlarged and the cardiac sounds were normal.

The usual regimen of hot abdominal stupes, warm rectal irrigations with physiologic solution of sodium chloride, and the maintenance of the fluid intake at 3,000 cc. or more for each twenty-four hours was instituted. The urinary output rose from less than 1,000 cc. daily to 1,500 cc. or more in each twenty-four hours. A diet that was low in residue was prescribed and in twelve days the value for the urea was 40 mg. per hundred cubic centimeters of whole blood, whereas on admission there had been 126 mg. of urea per hundred cubic centimeters of whole blood. Roentgenologic studies of the gastro-intestinal tract did not reveal anything abnormal.

CASE 8.—A woman, aged 72, was admitted to the hospital seriously ill. One week prior to her admission to the hospital she had had pain in the lower part of the abdomen, and distention, which had been followed two days later by nausea and occasional vomiting. Three days after onset of the present illness, the vomiting had become so severe that it probably was stercoraceous. After one day the vomiting had ceased and since then she had had severe hiccuping. During the first five days of the illness she had not had a bowel movement and, so far as the family knew, she had not passed any flatus. Her general health before the present illness had been moderately good, with the exception of slight loss of weight and occasional headaches.

General examination revealed that the patient was rather frail. There was no fever, but the pulse rate was 120 per minute. The pupils reacted, the tongue was dry and rough, and the heart and lungs were essentially normal. There was an arteriosclerosis of moderate degree. The abdomen was greatly distended and tender but there were no masses in the abdomen. Rectal and pelvic examinations did not reveal anything abnormal. The reflexes were equal and there was no edema.

Hot abdominal stupes and warm rectal irrigations relieved the distention in a few days. The patient appeared to be improved. However, after a few days the urinary output decreased, the blood urea rose to 220 mg. per hundred cubic centimeters of whole blood, and nine days after her admission to the hospital she died.

CASE 9.—A man, aged 82, had been in good health until two days prior to his admission, when he had had nausea, which had been followed by vomiting and colicky abdominal pains. For years he had had constipation and had not had a bowel movement without the use of purgatives. For two days prior to the onset of the present illness he had not had a bowel movement, and enemas had been of no avail. His appetite had been good but he had lost 20 pounds (9 Kg.) during the past year.

He was generally well developed but poorly nourished. There was no fever; the pulse rate was 100 beats per minute; the systolic blood pressure was 225 mm. of mercury and the diastolic 130 mm. There was a rather marked arteriosclerosis. The pupils reacted sluggishly to light. The lungs were clear. The heart was somewhat enlarged but there were no significant murmurs. The abdomen was distended but without palpable masses or localized tenderness. Rectal examination did not reveal anything abnormal. The reflexes were equal and there was no edema.

Continuous hot abdominal stupes, rectal irrigations, maintenance of the fluid intake at 3,000 cc. or more daily, and the low residue diet quickly relieved the abdominal symptoms. The blood urea dropped from 62 to 40 mg. per hundred cubic centimeters of whole blood. However, the patient died suddenly on the third day after his admission to the hospital, probably as a result of coronary heart disease. Necropsy was not obtained.

CASE 10.—A man, aged 84, was admitted directly to the hospital. For twenty-five years he had occasionally resorted to a catheter for the relief of a urinary obstruction. After a few days of catheterization he usually had been able to void again. Following self catheterization one month before, the left testicle had become swollen.

He had had regular bowel habits until three days prior to his admission to the hospital, when the abdomen had become distended and had caused discomfort. He had taken an enema without results. The following day he had taken repeated enemas and a dose of castor oil, which had produced nausea, vomiting, hiccups, and more marked abdominal distention.

He was generally well developed and well nourished. The skin and mucous membranes were of good color. The pupils were small, probably as a result of a dose of morphine. The temperature was normal. The heart and lungs were essentially normal. The abdomen was greatly distended and tender, but no masses could be palpated. There was a moderate ventral hernia but there were no incarcerated loops of intestine. There also were moderately large inguinal hernias, which were well supported by trusses. The rectal examination revealed prostatic hypertrophy.

Hot abdominal stupes, warm rectal irrigations and a low residue diet were administered, and 3,000 cc. or more of fluid was given daily. In five days the abdominal symptoms had subsided. The urinary output, which had been less than 500 cc. daily at the time of his admission to the hospital, had returned to normal. The blood urea had dropped from 54 to 24 mg. per hundred cubic centimeters of whole blood. Roentgenologic studies of the gastro-intestinal tract did not disclose anything abnormal. The prostatic obstruction was relieved surgically and five months later the patient's health was good.

COMMENT

The laboratory data of these cases are given in the table. The patients were all men except one, classified as patient 8. They were all middle aged or getting well into old age. In cases 2, 4 and 6 the blood pressure was normal; in the rest of the cases it was definitely elevated. Arteriosclerosis was present in moderate to advanced degrees in all the cases. The blood urea determination on whole blood gave values that were higher than normal; if all these determinations had been made on the days on which the patients were admitted to the hospital, some of these values probably would have been higher. The values for the blood chlorides were high normal in all cases except case 10. In this case, chemical analysis of the blood was not made until the abdominal symptoms were subsiding. Severe degrees of anemia were not found in any of these cases. There was a moderate degree of anemia in cases 7 and 8. Case 1 was the only case in which the urine did not contain pus. Moderate or definite albuminuria was present in all the cases. Cases 5, 8 and 9 presented definite hematuria.

The absence of anemia in most of the cases probably indicated that the hyperazotemia had been present only a short time. The tendency to high concentrations of chlorides and normal carbon dioxide combining power of the blood distinguish this condition from obstruction of the upper part of the intestine, in which concentrations of urea in the blood are increased, the chlorides of the blood are decreased, and the carbon dioxide combining power of the blood is markedly increased. All the patients had arteriosclerosis, which was usually accompanied by hypertension and always by albuminuria. Erythrocytes were present in the urine in

cases 5, 7 and 9, and moderate to great numbers of leukocytes were present in the urine in all the cases except case 1. Aside from the fact that pyuria may indicate genito-urinary infection, the significance of the pyuria is not known. There was nothing to suggest a clinical picture of cystitis, pyelitis or pyelonephritis in any of the cases except case 8, in which the patient had had pyelitis many years before. This patient may have had a symptomless pyelitis or pyelonephritis ever since, but if she did she was unaware of it. Transient degrees of obstruction to a free flow of urine from an enlargement of the prostate gland, which is sufficient to produce stasis and a low grade symptomless cystitis, pyelitis or pyelonephritis, are possible in the rest of the cases. However, in the absence of such a history in all except case 10, this is not in keeping with clinical experience.

All these patients excreted less than normal amounts of urine during the first days of their stay in the hospital. Dehydration doubtless was a factor in the production of the oliguria; however, their illness was of too short duration to produce a degree of dehydration that would be sufficient to send the urinary excretion to such low levels. All the patients had been on regular, soft or liquid diets before coming to the hospital and in none of these cases was the nausea and vomiting severe enough to cause the patient to refrain from taking fluids by mouth. The oliguria is best explained on the basis of temporary partial suspension of renal function. In view of these considerations, it is reasonable to believe that these patients had decreased renal reserves. The kidneys were able to maintain normal excretory functions when no added loads were to be borne, but, with an added load, a temporary partial suspension of function occurred, with subsequent oliguria.

The mechanism that produced the signs and symptoms of obstruction of the lower part of the intestine is not easily explained. Renal insufficiency is not an adequate explanation, because the failure of renal function is not usually accompanied by symptoms of intestinal obstruction. It also is important to point out the fact that colonic obstruction of long standing does not produce changes in the blood chemistry if renal function is normal. Stones in the kidneys or ureters may produce colics which are difficult to distinguish from those which arise in the intestine. Such colics may be accompanied by deranged intestinal action and slight degrees of abdominal distention, but these symptoms never are as severe as they are in intestinal obstruction. It is of interest here to point out the similarity of this condition to that which frequently is seen after major surgical operations on a kidney. A few days after the operation the abdomen may become somewhat distended, so much so that intestinal obstruction may be feared.

An easy assumption would be that an enterocolitis was present in these cases and that bacteria or bacterial toxins pass from the colon to the kidney through the blood stream and secondarily involve a transient renal insufficiency. An enterocolitis is usually accompanied by fever and diarrhea; abdominal distention is not present. In long-standing infections of the colon, in which numerous ulcerations occur, as in chronic ulcerative colitis, abdominal distention, unless there is a perforation, is not a prominent symptom and renal insufficiency is rare. There are no data to support the view that this enterorenal syndrome is produced by infections in either the kidneys or the intestine, singly or combined. As a matter of fact, local disease in either the kidneys or the intestine cannot be held responsible for the clinical picture.

There was definite arteriosclerosis present in all the cases. To assume that the renal insufficiency was produced by the arteriosclerosis is in keeping with clinical and pathologic experience. It is also conceivable to assume that both the ileus and the transient renal insufficiency were the result of synchronous local vascular disturbances in the kidneys and intestine or were the result of reflex action of the central nervous system. In the cases in which an exploratory laparotomy was performed there was a dilatation in the lower part of the ileum and right half of the colon, but no detectable circulatory disturbance. The absence of circulatory changes in the intestine is not convincing enough to assume that the syndrome was not the result of circulatory changes that were produced by vascular disease. The two exploratory operations were most valuable in the formation of a mental picture of what was going on in the abdomen, and in ruling out gross pathologic changes.

There was accompanying disease of the gallbladder in the two cases in which exploratory operations were performed. In case 3 the gallbladder was discovered to be filled with stones at the time of exploration, and it was therefore removed. Cholecystitis is often accompanied by gaseous distention of the abdomen. It must be admitted that the pathologic changes in the biliary tract may have been responsible for some of the symptoms in these two cases. However, in making further clinical studies a certain amount of data indicates that this transient train of symptoms is often superimposed on more definite and important organic diseases of the colon.

From a surgical point of view this clinical syndrome presents a problem of considerable interest and importance. Diseases in general fall into three main groups: those definitely nonsurgical, those definitely surgical, and those questionably surgical. Conditions of the type under discussion, when first seen by the consultant, seem to be without doubt surgical, and, unless one is watchful, the abdomen actually may be opened and explored to the chagrin of the surgeon; further study, on the other hand, will reveal that the condition is after all a matter for medical management—an ileus, to be sure, but one that has as its basis an upset of the chemical balance, which is the result of a multiplicity of causes. These causes may be summed up to be the result of senescent changes in all the organs; changes that are of such a nature that the patient skates continually on thin ice. The bodily reserve is diminished; this is particularly true of the systems whose function it is to eliminate body waste.

Because this syndrome concerns not only one part of the colon but all of it, there are complex factors which simulate acute obstruction of the small intestine. It must be recalled that a patient can go for days or even weeks with an almost total obstruction of the transverse, descending or sigmoid flexure of the colon, or of the rectum without very severe obstructive symptoms, and that in these cases the onset is rather sudden.

It is true that the physician cannot afford to miss the diagnosis of acute intestinal obstruction and that there may be an occasional case in which immediate operation is imperative. On the other hand, cases of this nature are necessarily bad risks and this must be kept in mind. With the perfection of the nonsurgical treatment, these patients may be tided over the acute intestinal obstruction with a medical decompression,

which has been described so well by Wangensteen, and there is rarely the necessity for immediate operation. By supplying fluids by the intravenous and subcutaneous routes, these patients can be kept comfortable and their chemical upset readjusted; studies can be continued, and in the event that operation is actually indicated, it can be carried out at considerably less risk. It will be found, however, in cases which fall within the realm of the type under discussion, that the patients will continue to improve under medical management, under readjustment of their chemical balance; that the syndrome is not directly the result of gross pathologic changes; and, last but not least, that operation can be avoided to the satisfaction of both the patient and the surgeon.

SUMMARY AND CONCLUSIONS

1. In ten cases, which are presented, there were symptoms suggesting obstruction of the lower part of the small intestine or of the colon.

2. These patients had an elevation of the concentration of urea in the blood, but in contrast to the alterations of blood chemistry, which usually occur in obstruction of the upper part of the small intestine, the values for the chlorides were high and the carbon dioxide combining power was normal.

3. If a patient presents the signs and symptoms of acute obstruction of the colon and if the value for the blood urea is high, the routine method of conservative administration of fluids and warm rectal irrigations should be followed, and stupes should be applied to the abdomen.

TREATMENT OF THE STUTTER TYPE PERSONALITY IN A MEDICAL-SOCIAL CLINIC

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The National Hospital for Speech Disorders opened its doors seventeen years ago. Thousands of young men and women have availed themselves of our clinical services, 70 per cent of whom were given free treatment. Incidentally, since I opened the clinic we have handled over 15,000 stutterers, besides several thousand nonstuttering speech defectives.

Stuttering is herein defined as that speech phenomenon which is characterized (1) by tonic and clonic spasms of the vocal tract, which (2) result in conversational difficulty characterized by hesitancy. Theoretically, it is assumed that the stutterer type personality in one born with a special organic structure having constitutional factors which all but parallel the constitutional factors of the nonstutterer type. The stutter type is an extremely sensitive personality, in which the emotional range always overreaches that of the nonstutterer type. This human organism is not always destined to stuttering speech. Only an environment of opposition accentuating the native conflicts to which one is conditioned can evoke stuttering in its various forms; a neutral or favorable environment does not provoke or condition the individual to stuttering. The oppositional environment may be encountered either in early childhood or in adulthood. Consequently, a particular kind of unfavorable environment may evoke stuttering from this organic stutter type either in childhood or in adult life. A specially created environment, such as our medical-social clinic, which is favorable, is the means by which the patient is unconditioned. That is, he is brought back to his initial stage or prestuttering state of security. My paper deals with the description of this special environment and the method of unconditioning the stutterer.

Years of observation and work have convinced me that stutterers are not speech defectives as conventionally understood. They can all speak normally under certain conditions. Their intermittent spasmodic speech is not the result of defective oralization but is conditioned in the stutter type of personality by highly emotionalized states of mind. They are agitated human organisms exhibiting a lack of forcefulness and decisiveness. Uncannily, they are moved back and forth across the borderline between emotional balance and emotional imbalance. The stutter type is further recognized by an incoordinated energy output. Their efforts, although numerous, are scattered. They shuttle from one thing to another. The usual result is ineffective social adjustment. All this is surmounted by extreme feelings of inferiority, culminating in chronic fear.

Opinions emanating from different points of view are centering on the fact that it is an emotional personality problem. For instance, Blanton,[1] Brown,[2] Solomon,[3] Clark[4] and West[5] say that stuttering is an emotional and personality disorder. Years ago I[6] stated that the problem is centered in the field of human emotions.

The adult stutterer usually gives a history of having been a nervous, fearful child, an unduly irritable, excitable child, often living in a psychoneurotic parental atmosphere surcharged with nervous tension. Such is the fertile soil or the agar-agar in which the stutter type is cultured.

From early childhood, conflicting emotions rule the stutterer's mind. His normal impulses are inhibited. He is a victim of dread, even terror, so that in the plastic years his doom is practically sealed. His personality development undergoes an ebb and flow that tends toward disintegration. In adult life the fears, morbidities and desolation associated with speech spread into every field of thought and activity. No one knows him as he really is. The attributes of his personality make no impression, because his stuttering is the focal point of interest. In short, stuttering is a pernicious living thorn in the flesh, which numbs the heart, distorts the processes of mind, paralyzes normal impulses with a searing sense of inadequacy, and imprisons human lives in hopelessness and uselessness, forever haunted by the victim's own unbearable sense of futility.

The following letter, to the editor of an evening paper[7] adds a graphic note to the stutterer's economic plight:

Sir: I am a stutterer, a year out of college. Searching for work proved fruitless. What chance has a stutterer? I want work, to earn the food I eat, the clothing I wear, and a bed

Read before the New York Neurological Society at the New York Academy of Medicine, Dec. 4, 1934.

1. Blanton, Smiley: Speech Disorders, Ment. Hyg. **13**: 740 (Oct.) 1929.
2. Brown, F. W.: The Problem of Stuttering, read before the annual meeting of the American Society for the Study of Disorders of Speech, Chicago, Jan. 1, 1931.
3. Solomon, Meyer: Stuttering: Its Nature and Mechanism, read before the twenty-second annual meeting of the American Psychopathological Association, Atlantic City, N. J., June 8, 1932.
4. Clark, L. P.: The Mental Treatment of Stammering, read before the New York Psychiatric Society, Nov. 1, 1933.
5. West, Robert: Stuttering as a Normal Reaction to an Abnormal Situation, read at the annual meeting of the American Society for the Study of Disorders of Speech in New York, Dec. 23, 1933.
6. Greene, J. S.: The Problem of the Stutterer, read before the annual meeting of the Medical Society of the State of New York, New York, May 23, 1923.
7. Stutterer, John: Letter to the editor, New York Evening Post, editorial page, July 13, 1934.

and room. But it seems utterly hopeless for me to meet the standards imposed by the merciless competition today. Am I and other stutterers, doomed to a life eliminated from gainful activity? What hope is there for me to play a man's part?

JOHN STUTTERER.

John Stutterer's plaint has echoed down through the ages. Only recently Dr. Albright, a Haverford College archeologist, brought from the ruins of the biblical town Beth Shemish a prayer on a small clay tablet reading as follows: "Oh God, cut through the backbone of my stammering. I desire that thou shalt remove the spring of the impediment."

Thus, the antiquity of stuttering is beyond question, because the antiquity of human emotions is beyond question. Just as long as there are people whose emotions are intense, whose chronic fear reactions are dominant, so long will there be people of the stutter type and so long will they challenge ingenuity to get them out of their difficulty. I feel sure that one cannot fully realize what stuttering speech means and does to an individual unless one has had an opportunity over a long period of time to deal with thousands of these cases.

In and around greater New York alone the challenge is staggering. Out of the six million population there are approximately 20,000 stutterers. The report of the White House Conference on Child Health and Protection [8] shows that 200,000 children stutter and that only one out of ten recovers during the elementary school period. This immediately gives one an idea of the prospective number of young persons continually filtering in and increasing the vast army of adult stutterers. Numerically there is a tremendous disproportion between physicians interested in this work and the patients in need of help.

The treatment of stuttering has always been a baffling task because the basic problem of the stutterer was not viewed in the correct perspective. Not only has the general problem been ill defined but the methods of treatment have been poorly unified. It was concluded that an amalgamated therapy was essential. Consequently, treatment had to be carried out both in the concrete and in the abstract form, physical and psychic, along broader lines. These forms are carried out very satisfactorily through a special group approach, working from the general to the specific, from the group to the individual, or vice versa.

Our medical-social clinic therapy has undergone many modifications and extensions. It is best described as a composite therapy of a medical, psychologic, reeducational and social nature, the essential feature of which is the group approach.[9] The aim is to treat the stutterer's whole personality. The group psychology has proved practical because, beyond a certain point, the individual problems of the stutter type become the problems of all.

With children, speech training and methods of correction are carried out under medical supervision in school-clinic classes, in the form of a socializing task. Concerning adults, the volume of work points in only one direction: In order to give equal opportunity to all, these patients must be dealt with *en masse*. Social clinics under medical supervision, as community projects, will prove to be, as I have found, the most effective medium.

In our clinic the initial interview with a stutterer, experience has taught us, is of far reaching importance. The results of his entire course of treatment quite often depend on his initial contacts. On his arrival we start rebuilding his personality at once. Vainly he has been making the rounds of physicians, psychologists, schools and cults. Consequently, he carries a chip on his shoulder and views one with suspicion. In spite of that fact, he is made to feel that our medical-social clinic is not "just another place."

He is next given a physical examination. Defects and poor hygiene are noted, recommendations are made by the physician in charge, and everything is done to improve his physical status.

He is then, thirdly, given a speech test. For that purpose we have a fully equipped radio department. The patient speaks into a microphone, answers questions or reads, and a record of his defective speech is made on a disk. This recording serves a double purpose: First, we know his speech condition before treatment is begun. Second, subsequent records are made after a period of treatment, showing his improvement and the effect of the medical-social clinic modus operandi.

Fourthly, he is examined by a psychologist. Specialized tests given the patient afford us an idea of the individual's mental capacities. Also, we try to obtain the degree of control and intensity of the individual's emotions. To date, we have no really accurate way of measuring emotions as we do intelligence; still, through a series of specialized tests, which we have devised, we are able to obtain an index of the stutterer's chronically exaggerated emotional status.

The idea that a stutterer has an exceptionally high intelligence quotient is very prevalent, especially with the mothers of stuttering children. This misconception is often used as a defense or compensatory mechanism and is just a case of reflected glory. One stutterer (like A. B. P. or S. M. or the late A. B.) may throw off enough rays of intellectual glory to illuminate thousands of other less prominent stutterers who are just regulation individuals.

Concerning the superintellectuality of stutterers, West, Travis and Camp [10] found that the median intelligence quotient for stutterers was 96.5, and that, as a special group, they were not mentally retarded.

Our studies, based on the Otis self-administering intelligence test, are in agreement with these statements. Our mean intelligence quotient for the group is 102.68 ± 1.1 and is slightly higher than the mean intelligence quotient for the nonstuttering population. It was found also that the mean intelligence quotient of the males was 104, which is not significantly different from our total mean.

Our broad amalgamating approach is eclectic. We have proved to our satisfaction that it is inadvisable to adopt one therapy to the exclusion of all other procedures.

In viewing stuttering as an emotional and personality disorder, we find that reeducational speech work per se is not enough. Scientific treatment must develop a voluntarily controlled fulness and power in the weak and incompletely developed organizing parts of the personality. How to integrate the disorganized individual is the problem. Integration must take place so that the vital personality traits are placed in their proper relationship. Throughout the treatment the

8. Child Health and Protection, White House Conference Proceedings, 1930.
9. Greene, J. S.: I Was a Stutterer, New York, Grafton Press, 1933.
10. West, Travis and Camp: The Handicapped Child, White House Conference Reports, 1931.

interest of the doctor and the patient must be focused on the total personality.

This does not mean that it is unnecessary to do anything for the stutterer's speech. According to some theoretical, psychologic and psychiatric points of view, stutterers should be cured without speech work. Practically, that is not so. Although there may not be any inherent virtue in speech work, still it is the only medium for correcting vocal tract remediable maladjustments. Also, negative speech habits that have become ingrained must be corrected.[11] One cannot talk a stutterer out of his habit spasms. Technical faults respond to reeducational pressures, not to theoretical discourse alone. Concentration on style or good speech acts as a distraction, so that fear is relegated during the development of good speech habits. The physiology of breathing is easily explained and comprehended, so that a normal calm manner of breathing is readily adopted. Breath control is a wonderful factor in emotional control.

If the patient understands the simple anatomic and physiologic functions of the vocal tract, it is very effective in removing many mysterious speech interferences. When the stutterer's spasms of abdomen, chest, throat or mouth are viewed in their proper light, his reason comes to the fore. Physical obstructions to speech are reduced in number, and relaxation is effected.

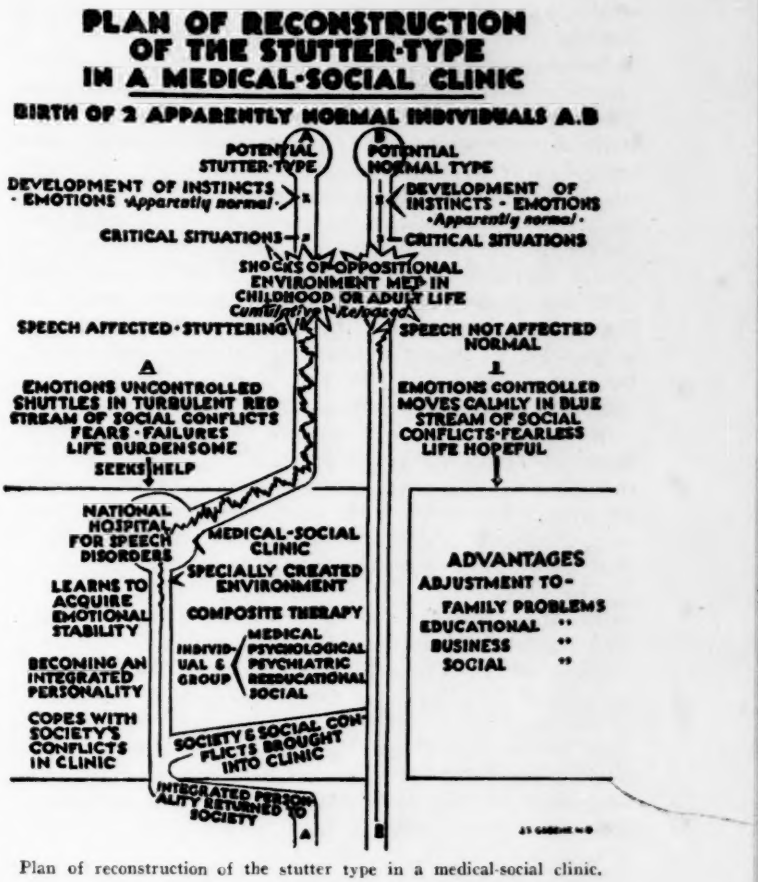
Alternating group and individual reading is an excellent means of gaining confidence. Emotions are tranquilized. Thoughts are formulated without fear. Haziness is gradually eliminated and finally discontinued.

Muscular relaxation and coordination are important group activities which stutterers find hard to effect. Stutterers, depending on the degree of their excessive and inconsistent discharge of emotions, show pronounced differences when compared to nonstutterers in their responses to muscular contraction and relaxation. They belong to a naturally retarded performance group. They demonstrate stuttering not only in their speech but in other ways as well. Their movements are jerky instead of regular, excessive or diminished. Shortly after awakening, some stutterers are unable to bring their speech mechanism into action. In fact, they are muscularly in a state of twilight sleep. They speak worse than usual, and often, until they get themselves muscularly warmed up, are hardly able to speak. In others, the chronic emotional and muscular tensions are so pronounced that the stutterer seems to be made of one piece—set and rigid. This rigidity is readily noticed when he tries to speak. The majority bring into play unnecessary and excessive muscle movements —a faulty muscle balance. There is considerable difficulty in controlling fine and gross muscle movements.

A mother frequently complains that her stuttering child talks badly, walks badly and does all things more or less badly. He is the fearful and clumsy one in the family. Adults complain of jerky muscular movements and an inefficient energy expenditure. Their golf and tennis is not spectacular. They drive their automobiles in a spasmodic style. We have had, like others,[12] stuttering musicians. A violinist may get glued to a note and repeat it several times, spasmodically. A piano player's finger seems to stutter repeatedly on a note before striking the next one. A typist may likewise stutter on her machine.

11. Dunlap, Knight: Habits—Their Making and Unmaking, New York, Liveright Publishing Corporation, 1932.
12. Bluemel, C. S.: Mental Aspects of Stammering, Baltimore, Williams & Wilkins Company, 1930.

All this inefficiency prescribes the necessity of reorganizing the stutterer. For this purpose we have introduced group activities of rhythmic coordination exercises to music. Groups are taught to combine and alternate muscular contractions with progressive degrees of relaxation. Thus they learn to counteract an excess of incoordinated activity and bring quiet, peace and tranquillity to the nervous system. They gradually become inculcated with a sense of rhythm and harmony, which is seen in diminished tension and gracefulness of movements. They acquire a certain amount of abandon, which in turn is reflected in their speech. The major problem, however, is to change the personality and develop emotional control.



Plan of reconstruction of the stutter type in a medical-social clinic.

Every stutterer's life is one of introversion, repression and frustrated desires. Infantile attitudes and conflicts remain with him. He finds no satisfactory solution for his problem. The psychiatrist's task is to discover the underlying chain of causes. He must replace the infantile attitude with an adult personality. We found that a departure from the traditional therapy was necessary. The problem is rather intricate and not easy.

Psychoanalytic treatment of the usual type wherein one tries to verbalize thoughts is an almost impossible task for a stutterer. The fostering of freedom and rapport between the analyst and the stutterer, consequently, is more than usually drawn out. Our patients who have been subjected to psychoanalysis before coming to us state that the process is long and costly and is not productive of desired results. The patient, while the analyst sits silently by, struggles with his free associations and finds transference difficult. Moreover, the analyst seldom reaches the constructive phase of

his treatment. Since his procedure is only psychic, it is not complete without the physical reeducational therapy. This especially holds true if the psychoanalyst does not consider all immediate and secondary intrinsic speech difficulties.

I know of many stutterers who, during analysis, kept asking themselves "When will the doctor do something for my speech?" In every stutterer's case his defective verbal production is a fixed living thing, and, as pointed out, every form of treatment must consider that phase in actual practice; our psychiatric treatment does so.

Our specially created atmosphere [13] is one in which informality, encouragement and sympathy hold sway; one which radiates calm, peace and tranquillity. The stutterer is put at his ease in such a way that perhaps for the very first time in his life he appreciates a hitherto unknown spiritual peace. In such an atmosphere his psychoneurotic symptoms, which complement his stuttering speech, respond readily to direct and indirect suggestion. Old habits of a nonsocial, egocentric, fearful individual are broken down. Feelings of shame and secretiveness are brought out into the open. To effect this, we have introduced a special procedure in our psychiatry. I call it "open door" or group psychiatry, and it has proved to be very practical and beneficial. The patient consults with the doctor in a large room, the door remaining open. It is possible to insure a sense of intimacy and privacy by placing the desk at the far corner of the room. In spite of the fact that it is an open room, it is amazing how quickly the patient adjusts himself to this open door psychiatry and is not perturbed. Minor emotional disturbances and even major conflicts are successfully resolved. However, when deemed necessary, a closed door interview is given, so that unconscious difficulties that have been evaded are gotten under control.

The open door method has one valuable asset. It makes it possible for the doctor to call in other patients, who happen to pass the open door, and utilize them in various ways. Their presence is most helpful; when necessary, they serve as eager listeners or participate in the discussion. The personal aspect of secret problems is eliminated and the patient realizes that these problems are not his alone but belong to the stuttering fraternity as a whole. Almost unbelievable reconstruction takes place within a short time and an integrated personality then comes into being.

The importance of social therapy, which goes a long way toward adjustment, is very pronounced, especially for working boys and girls who attend our evening clinics. These clinics have been carried on since the opening of the institution. Since stutterers are afraid "to go places and do things," in brief, are afraid of social contacts, we reverse the situation by bringing society to the stutterer.

In our medical-social clinic, all patients automatically become members of our clubs. No matter what their interests, we try to furnish the outlet so that self expression becomes a matter of course. We have debating and literary clubs, a dramatic club, a class in language and word study, one in eukinetics, a choral singing club, and other enterprises. The activities arising from these are periodic dinners, entertainments, dances, outings and the like. All of these specially created socializing agencies tend to bring about a complete metamorphosis in the stutterer's life, so that he can cope with oppositional environments.

13. Greene, J. S., and Wells, E. J.: The Cause and Cure of Speech Disorders, New York, Macmillan Company, 1927.

Besides the regular medical, psychologic and reeducational activities, Wednesday evening is devoted to an important meeting of the entire clinic, forming an association called the Greene-Ephphatha Club. It takes the form of a business meeting with a planned program and has a chairman, secretary and minutes. Topics are assigned or chosen. The speeches are short and all voluntary. It takes courage to volunteer; consequently, as a therapeutic procedure, it is of great value. Occasional criticism and constant encouragement is the order. A few remarks on the outstanding feature of the evening or on some aspect of the stutterer's personality made by the director concludes the meeting. There is an intangible something at these meetings that gives the stutterer an exalted, enthusiastic attitude and a definite feeling of social security which is difficult to describe. Into these meetings is put a great deal of practical psychology, so that each patient in the presence of his fellow stutterers, where there is always some one worse than he is, goes through a speech crisis, which is a spiritual uplift. He thereby gets his first hold of confidence in a speech situation of a vital nature. Here he emerges from his introverted shell in a form of spiritual conversion; faith and belief in himself become crystallized. It establishes the foundation that reconditions him to subsequent social contacts.

Our dramatic club gives the patients additional opportunities for social adjustment. They are trained to acquire stage poise in order to achieve that fluid flow of personal adjustment necessary to changing conditions. We have developed latent talent. A group of ex-stutterers are now giving little plays in the different settlement houses around town.

CONCLUSION

1. The stutter type personality is born with a highly emotionalized organic structure.

2. Only an oppositional environment to which he becomes conditioned may evoke stuttering, which is not a speech defect but a physical protest of an instinctive fear emotion.

3. The stutterer's problem is primarily one of psychologic reconstruction, emotional control, and integration.

4. The vast number of stutterers requires special group treatment in a specially created environment wherein they acquire a spiritual tranquillity.

5. The most practical agency for unconditioning the stutterer is one encompassing medical, psychologic, psychiatric, reeducational and social therapies, which I have developed in our medical-social clinic.

NOTE.—A practical demonstration of the work of the medical-social clinic was given through the presentation of ten patients. They gave short impromptu talks on topics suggested to them by the audience. These patients demonstrated the permanence of their cure, having received treatment as far back as sixteen years, fourteen years, twelve years, and so on down to six months.

126 East Thirtieth Street.

History of Dementia Paralytica.—The literature dealing with the history of dementia paralytica usually credits the first description of the pathology of the disease to John Haslam, the first satisfactory recognition of the disorder to A. L. J. Bayle and the relationship of the disease to syphilis to Esmarch and Jessen. These studies seem to be the three pillars on which the subsequent development of knowledge concerning this disease has been built.—Moore, Merrill, and Solomon, H. C.: Contributions of Haslam, Bayle, and Esmarch and Jessen to the History of Neurosyphilis, *Arch. Neurol. & Psychiat.* **32**:804 (Oct.) 1934.

VALUE AND LIMITATIONS OF SPINAL PUNCTURE IN CEREBRAL HEMORRHAGE OF THE NEW-BORN

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During the past few years, numerous investigators have studied the value of spinal puncture in the diagnosis and treatment of cerebral hemorrhage in the new-born. Sharpe concludes that bloody fluid is an indication of cerebral hemorrhage, that clear fluid practically excludes such a diagnosis, and that whenever the cerebrospinal fluid is bloody, repeated punctures should be done. In a recent report he [1] says:

> If free blood is present in the cerebrospinal fluid, repeated lumbar punctures of spinal drainage are immediately instituted, just as in adults and children with head injuries, in order to permit the free blood to escape and thus avoid the great danger not only of death but in some cases the even more tragic result of spasticity and retarded mentality. If the diagnostic lumbar puncture reveals clear cerebrospinal fluid, the physician knows almost certainly that no intracranial hemorrhage has occurred and that the signs were most probably due to a temporary cerebral edema of varying degree.

Investigations indicate that fresh blood in the cerebrospinal fluid of the new-born, especially if the color remains constant in successive portions of the fluid, suggests the existence of a cerebral hemorrhage, but that bloody fluid is not a positive diagnostic criterion, since the blood may be due to puncture trauma. Clear cerebrospinal fluid, on the other hand, does not exclude cerebral hemorrhage, especially of the ventricles.

It is difficult to determine the importance of xanthochromia, or yellowish discoloration of the cerebrospinal fluid, in cerebral hemorrhage. Greengard, Lifvendahl and I [2] found that 88 per cent of more than 100 new-born infants had xanthochromic fluid; the benzidine and van den Bergh tests were negative in most of these. In some of the cases in which xanthochromic fluid was obtained during life, cerebral hemorrhage was found post mortem; in others, cerebral hemorrhage was not found. I believe that xanthochromia with a positive benzidine test speaks for a cerebral hemorrhage and that without such a positive reaction no diagnosis of cerebral hemorrhage can be made, as only meningeal congestion may be the cause.

There was also a variation in the amount and pressure of cerebrospinal fluid removed from patients with cerebral hemorrhage in the series studied, 5 cc. being taken as the greatest normal amount and 6 mm. of mercury as the maximum normal pressure, in new-born infants. In most cases of cerebral hemorrhage the amount obtainable and the pressure were increased.

I believe that, at the present state of our knowledge, bloody cerebrospinal fluid is not pathognomonic of cerebral hemorrhage. Of greater value in diagnosis is clear xanthochromic fluid with a positive benzidine test, and increased amount and pressure. However, since even clear cerebrospinal fluid does not exclude cerebral hemorrhage, the diagnostic value of lumbar puncture in cerebral hemorrhage is limited.

In order to evaluate the therapeutic importance of spinal puncture in cerebral hemorrhage of the new-born, it is necessary to consider the pathology and symptomatology of cerebral hemorrhage in the new-born.

The hemorrhage varies in location and extent. The most frequent site of hemorrhage is the subarachnoid space. Meningeal hemorrhage was present in all the cases that Saphir and I [3] studied, irrespective of involvement of any other part (table 1). In prematurely born infants the hemorrhage is often around the pons and cerebellum.

Do all patients with cerebral hemorrhage die or develop diplegia, hydrocephalus or idiocy? Our records indicate that such is not the case (table 2). Of 292 infants with cerebral hemorrhage among 1,527 prematurely born infants admitted to the Sarah Morris Hospital for Children from 1927 to 1934 inclusive, 173 died but 119 survived. About 60 per cent of those who survived had no evidence of brain injury, as shown by Hess, Mohr and Bartelme [4] and their associates.

If one remembers that most instances of cerebral hemorrhage of the new-born are limited to the meninges and that in only a very small number is there bleeding into the cerebral substance proper, one can also see how recovery may occur without leaving a scar. Saphir and I studied the question of meningeal reaction in cerebral hemorrhage. We found no leukocytic reactions in any of our cases, either in the meninges or in the brain. Only occasionally was there an increase in endothelial cells in the meninges. We therefore believe that in some cases the cerebral hemorrhage is absorbed without scarring.

TABLE 1.—*Cerebrospinal Fluid in the New-Born*

	Normal	Cerebral Hemorrhage
Amount obtainable....	0.5 to 5 cc.	Usually increased
Pressure.....	1 to 6 mm. of mercury	Usually increased
Color.....	Clear or xanthochromic	Xanthochromic or bloody, but may be clear
Cells.....	0 to 3; lymphocytes	Usually increased; red and white blood cells
Benzidine test.....	Negative	Positive in bloody fluid in both uncentrifugated and centrifugated supernatant portions
		Usually positive in xanthochromic fluid
		Negative in clear fluid

The symptoms of cerebral hemorrhage during the neonatal period are not always the same. They may be classified into two types—irritative and somnolent—although some infants exhibit a combination of the two types.

The irritative type is characterized by great restlessness, a high-pitched cerebral cry, moaning, and a pained expression. The extremities may be spastic immediately after birth, although the spasticity may not be manifested for some time later. Facial paralysis may be present, although it should be remembered that not every instance of facial asymmetry or even every convulsion in the new-born means intracranial hemorrhage. Nystagmus may be present. The anterior fontanel not infrequently bulges in this type of hemorrhage.

From the Sarah Morris Hospital for Children of the Michael Reese Hospital.

1. Sharpe, William: Repeated Lumbar Punctures of Spinal Drainage: Diagnostic and Therapeutic Value in Traumatic and Allied Lesions of the Central Nervous System, J. A. M. A. **104**: 959-963 (March 23) 1935.

2. Levinson, Abraham; Greengard, Joseph, and Lifvendahl, R. A.: Cerebrospinal Fluid in the New-Born, Am. J. Dis. Child. **32**: 208 (Aug.) 1926.

3. Levinson, Abraham, and Saphir, Otto: Meninges in Intracranial Hemorrhage of the New-Born, Am. J. Dis. Child. **45**: 973-984 (May) 1933.

4. Hess, J. H.; Mohr, G. J., and Bartelme, Phyllis F.: The Physical and Mental Growth of Prematurely Born Children, Chicago, University of Chicago Press, 1934.

The somnolent type of cerebral hemorrhage, which is most frequent in prematurely born infants, is characterized by apathy, a subnormal temperature, difficulty in swallowing, fleeting cyanosis, and sometimes a depressed fontanel.

Infants suffering from cerebral hemorrhage refuse food entirely or take very little nourishment. Because such infants do not take food well, they become dehydrated very rapidly.

With the exception of the fleeting cyanosis, the skin of infants suffering from cerebral hemorrhage is usually dusky red, the duskiness being constant and most apparent on the trunk, the face at times being even pale. If there are active symptoms of cerebral hemorrhage, the duskiness may persist for days or even weeks. Retinal hemorrhages are sometimes present; these often result in optic atrophy.

If the cerebral hemorrhage is part of a hemorrhagic diathesis, there may be bleeding from the umbilicus, mouth and rectum. The coagulation and bleeding time of the blood are prolonged in these cases.

It is thus seen that not all cases of cerebral hemorrhage are of the same type, clinically or pathologically; further, that some meningeal hemorrhage may absorb without leaving any scar, even if no treatment is used. I therefore believe that in the somnolent type of cerebral hemorrhage spinal puncture is not necessary and, if done once, should not be repeated. In the irritative type, however, spinal puncture should be done for therapeutic purposes and may even be repeated.

The most important part of the treatment in cases that have been diagnosed as, or are suspected of being, cerebral hemorrhage is, I believe, complete rest. The infant should not be permitted to nurse from the mother but should receive the feedings by bottle, spoon or dropper. The feeding portions should be small, so that the baby will not be fatigued and cyanosis thus be produced. If breast milk is not available, diluted milk should be given. Physiologic solution of sodium chloride should be given subcutaneously for dehydration. The body heat should be maintained by keeping the infant in an incubator or by applying external heat by means of hot water bottles. Intramuscular blood is an accepted procedure.

In fleeting cyanosis either oxygen or a mixture of 95 per cent oxygen and 5 per cent carbon dioxide has been advocated. The Henderson apparatus would be very useful for this purpose, but the mask is too heavy for the baby. Oxygen by catheter is useful, but the supply of oxygen is uncertain; a small oxygen tent may be useful. Hess has recently devised a flow meter for administering oxygen to prematurely born infants in the incubator. I use oxygen without carbondioxide in my cases.

If the patient has convulsions, sedatives, such as sodium bromide or sodium amytal should be given rectally. Introduction of a hypertonic solution of sodium chloride or from 10 to 15 per cent dextrose solutions, intramuscularly, may also be used for relief of increased intracranial pressure.

30 North Michigan Avenue.

TABLE 2.—*Pathologic Changes in Forty-Five Cases of Intracranial Hemorrhage of the New-Born*

Location of Hemorrhage	
Meningeal	45
Ventricular	15
Intracerebral	2
Type of Meningeal Hemorrhage	
Subarachnoid	45
Subdural	27
Tentorial tear	6
Falx tear	4

TABLE 3.—*Incidence of Cerebral Hemorrhage in Prematurely Born Infants Admitted to the Sarah Morris Hospital, 1927-1934 Inclusive*

Total admissions	1,527
Cases of cerebral hemorrhage	292
Deaths	173
Survivals	119

U. S. P. ETHER FROM LARGE DRUMS AND ETHER FROM SMALL CANS LABELED "FOR ANESTHESIA"

COMPARISON IN SEVEN HUNDRED AND TWO OPERATIONS

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AND
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The United States Pharmacopeia, in the article on ether, (U. S. P. X) makes the following statement in italics: "Caution—Ether to be used for anesthesia must be preserved only in small, well-closed containers, and is not to be used for this purpose, if the original container has been opened longer than twenty-four hours."

This statement gives official sanction to the general practice in this country of using anesthetic ether chiefly in small cans of one-fourth and one-half pound. What remains in the can is usually regarded as unfit for anesthesia on the following day. Ordinary U. S. P. ether has been in use for many years in the laboratory of pharmacology of Cornell University Medical College for anesthesia in animals. Although this ether was taken from cans which had been opened many times, no ill effects were observed, but a systematic study of the question was not made.

Why should ether be considered unfit for anesthesia twenty-four hours after the container is opened? In a recent study [1] an answer to this question was sought from (*a*) the results of chemical tests for deterioration and (*b*) the experience of anesthetists.

The results of that investigation failed to reveal sufficient evidence to justify the twenty-four hour clause. The inquiry among surgeons and anesthetists disclosed that adherence to the practice directed by the United States Pharmacopeia has been so general that one does not readily find an anesthetist who has made observations sufficiently controlled to afford an acceptable judgment regarding U. S. P. ether taken from metal containers which had been opened several days prior to their use for anesthesia. Several anesthetists declared that they had used ether from cans that had been opened several days and that they had not observed any special danger in its use. On the other hand, many feel that such ether is undesirable, and among these the most divergent opinions prevail regarding the nature of the danger. Some state that the ether becomes very

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The authors are indebted to Dr. William DeWitt Andrus for his cooperation in carrying out this study.

1. Gold, Harry, and Gold, David: Stability of U. S. P. Ether After the Metal Container Is Opened, J. A. M. A. **102**: 817-820 (March 17) 1934.

irritant; some, that it becomes very toxic so that extremely small quantities produce symptoms of collapse; others state that they have found it loses some of its anesthetic properties so that with it satisfactory anesthesia cannot be induced. The view regarding the dangers of ether for anesthesia from a container that has been opened for some time seemed to be based chiefly on reports in the literature describing toxic reactions produced by samples of impure ether which failed to comply with the present U. S. P. standards.

The literature on the subject of deterioration of ether as determined by chemical tests also failed to supply a rational basis for the twenty-four clause. Baskerville,[2] who more than twenty years ago made some notable contributions to the chemistry of the oxidation of ether, urged the use of ether from small containers so that the entire contents might be used at one time because of the possible danger of deterioration after opening of the container. His emphasis on rapid deterioration was not justified by his own experiments, as in them ether was exposed for periods of months under extreme conditions before the tests for deterioration were made. No reports could be found in the literature to show that opening the container leads to rapid chemical deterioration of U. S. P. ether in metal cans, although the literature abounds in warnings against the danger of using ether for anesthesia which has been kept under those conditions.

In the previous study [1] it was shown that ether, whether labeled "U. S. P." or "for anesthesia," does not deteriorate rapidly under ordinary conditions when the metal cans are opened, part of the contents removed and the remainder stoppered with cork, even though no precautions are taken against exposure to air other than stoppering. Although the containers had been opened and again stoppered many times during periods of from several days to several months, the U. S. P. X tests were negative for aldehydes, peroxides and acids. These results were obtained with a group of more than fifty specimens of ether supplied in containers varying from quarter-pound cans to 55-pound drums by five manufacturers or distributors. In many cases the labels stated that the cans were copper lined, were so treated as to become "catalytically inert," or contained a coil of steel wire to inhibit oxidation. In the case of the steel drums, as well as many of the tin cans, no special claims regarding the quality of the containers were made. The results were identical in all.

It should be stressed that the foregoing statements regarding the stability of U. S. P. ether apply to the product as supplied in metal containers at the present time by the outstanding manufacturers in this country, to whom a large share of the credit is due for the work that has made such relatively stable ether available on a large scale.

Since a 27-pound or 55-pound drum of ether would last only a week or two in the average hospital, there seemed to be no justification for purchasing ether in hundreds of quarter-pound or half-pound tins at a cost five or six times that of ether in a large drum, which could easily be supplied to the operating rooms daily in quarter-pound tins by the hospital pharmacist. A smaller container, such as a 5-pound tin, which is easier and somewhat safer to handle, might in some cases prove more desirable than the larger drum.

However, even though ether labeled U. S. P. is the official ether of anesthetic quality, the view prevails that such ether is not suitable for anesthesia and that an especially purified ether is necessary for this purpose. To distinguish these two types of ether, the words "for anesthesia" appear on the cans of anesthetic ether. In the minds of many, this would exclude the ether in drums from use for anesthesia because it bears only the label "U. S. P." and not "for anesthesia." Therefore, before anesthetists could feel free to use U. S. P. ether for anesthetic purposes, obtained from a large drum, it was necessary to have the answer to another question; namely, is there any difference that can be detected in patients between the effects of U. S. P. ether taken from large drums which are opened from time to time and the effects of ether labeled "for anesthesia" taken from small containers opened less than twenty-four hours?

This formed the subject of the present investigation, which was carried out on surgical patients in the New York Hospital.

PLAN OF INVESTIGATION

The study was made with the "blind test." Those administering the anesthetics to the surgical patients were unaware of the source of the ether and identified the specimens in terms of code numbers in their records. The daily orders for ether were filled in the department of pharmacology. The supply was delivered to the operating rooms in quarter-pound and half-pound cans of ether bearing a special uniform label with the date and time the can was filled and a consecutive code number. All the cans were tightly stoppered with ordinary cork. Ether remaining in the small can after twenty-four hours of the time it was filled was not used for anesthesia during this study; this afforded more uniform and comparable conditions for the comparison of the two types of ether. At irregular intervals the drum ether was tested by the U. S. P. X tests for peroxides, aldehydes and acid (litmus test). In addition, all ether was tested daily by other extremely delicate tests [3] for both peroxides (solution of potassium iodide) and aldehydes (Nessler's reagent).

The U. S. P. bulk ether as supplied by a well known manufacturer was bought in 55-pound drums. For convenience of filling the daily supply of quarter-pound and half-pound cans, the ether in the drum was transferred to 5-pound tins which had previously contained ordinary U. S. P. ether (supplied by Eimer and Amend). These were thoroughly rinsed with the fresh drum ether, then filled with the latter, stoppered with cork, placed on a shelf in a dark room and stored at room temperature. This ether was compared with the ether labeled "for anesthesia," which was obtained in quarter-pound and half-pound sealed cans manufactured by the Mallinckrodt Chemical Works, Merck & Co. and E. R. Squibb & Sons. The necessary number of cans were opened for the daily supply and the contents transferred to the quarter-pound cans bearing the uniform label, after they were thoroughly rinsed with the fresh ether. In general, the two types of ether were alternated daily, although no fixed order was followed, in order to avoid the danger of possible detection by the anesthetist.

2. Baskerville, Charles: Ethyl Ether for Anesthetic Purposes, Am. Druggist & Pharmaceut. Rec. **57**: 162, 1910.

3. In the test for peroxides, 1 cc. of a colorless 10 per cent solution of potassium iodide was added to 10 cc. of the ether in a glass stoppered cylinder previously rinsed with the ether. The absence of a yellow color after shaking from time to time during five minutes indicates that not more than a trace of peroxide, if any, is present (result designated negative). In the test for aldehydes, 3 cc. of Nessler's solution (U. S. P. X) was added to 20 cc. of the ether in a glass stoppered cylinder previously rinsed with the ether. The absence of almost immediate change in color after shaking and allowing layers to separate indicates that not more than a trace of aldehyde, if any, is present (result designated negative).

A complete record of all cans of ether sent to the operating rooms was kept in the department of pharmacology. In addition to this open record, a sealed envelop containing a duplicate record was sent to the anesthetist with the daily supply of ether. These sealed envelops were opened for the purpose of identifying the specimens of ether only after the work had been completed and the results had been analyzed from records which gave no clue as to the source of the ether.

TABLE 1.—*Types of Operations in the Cases in Which a Mixture of Anesthetic Agents Was Used*

	Operation	U. S. P. Drum Ether	Small Can Ether Labeled "for Anesthesia"
1	Appendicectomies	68	64
2	Biliary tract operations	22	27
3	Major gynecologic operations	16	22
4	Prostate and bladder operations	7	4
5	Kidney and ureter operations	5	2
6	Gastric operations	11	14
7	Intestinal resections	2	6
8	Nose and throat operations (tonsils, adenoids, antrums, etc.)	40	60
9	Thyroid operations	5	4
10	Exploratory laparotomies	14	7
11	Radical breast operations	4	2
12	Brain operations	1	0
13	Splenectomies	1	0

The anesthesias comprising this study were conducted by nine experienced anesthetists. A group of 113 patients received ether alone and in these the open cone drop method was used. A group of 589 patients were anesthetized by a mixture of anesthetics comprising various combinations of tribrom-ethanol, ethylene, nitrous oxide and ether. In a large proportion of the latter group some form of rebreathing method was used for the administration of the ether. A record of the anesthesia was made by the anesthetist on a special form provided for each patient. It was filled out at the time of the operation and further notes were added as the additional observations were made. These special charts were employed for the analysis of the data when the work was completed. This form supplied the following significant data: the diagnosis, the type of operation, the name of the anesthetist and surgeon, the physical status of the patient before operation, the drugs given prior to anesthesia and the time of their administration, the amounts of anesthetics other than ether, the amount of ether used and the code number of the specimen, the character and duration of the induction stage, the stage of maintenance and the stage of recovery, and postoperative complications up to the time of discharge from the hospital. Special attention was paid to such factors as coughing, excessive mucus, undue struggling, vomiting, cyanosis, signs of collapse, unduly prolonged induction stage, and difficulty in obtaining sufficient anesthesia or relaxation.

These special charts also provided a space for a general estimate by the anesthetist of the quality of the anesthesia in the individual patients, which was recorded immediately after the operation and was expressed as "satisfactory" or "unsatisfactory." These designations were intended to express a judgment on the part of the anesthetist which would take into account factors which might reasonably influence the character of the anesthesia, as the temperament of the patient, the character of the operation, and the type of preliminary medication. Anesthesias in which the induction, the maintenance and the recovery were smooth and uncomplicated by struggling, coughing, vomiting or other special reactions made up by far the larger part of the group of "satisfactory" anesthesias. However, some cases presenting special and undesirable reactions were also placed in the group of "satisfactory" anesthesias. The plan may be made clearer by a few illustrations:

An anesthesia was described as "satisfactory" when a patient who was unduly nervous struggled violently during the induction but passed through the other stages of anesthesia without any special symptoms. If vomiting occurred during the induction stage in a patient who had received suitable preoperative preparation, the anesthesia was judged "unsatisfactory," whereas if vomiting occurred in an emergency operation in which the stomach was not empty the anesthesia was considered "satisfactory," provided it was normal in other respects. If cyanosis developed during the stage of extremely deep anesthesia purposely induced as is sometimes requested by the surgeon during a difficult cholecystectomy, the anesthesia was not judged "unsatisfactory," whereas if the anesthetist found it impossible to induce a normal depth of anesthesia without cyanosis the anesthesia was considered "unsatisfactory."

With the exception of the foregoing cases, anesthesias were regarded as "unsatisfactory" if the anesthetist's efforts to maintain smooth, even and uncomplicated anesthesia proved unavailing. In the designation "unsatisfactory" it is not intended to imply that the special symptoms were due to the anesthesia alone or to the ether alone, for differences in susceptibility of patients were not excluded, and other anesthetics in addition to ether were used in a large proportion of the cases. Nevertheless, ether was present in these mixed anesthesias, and it was felt that, if significant differences between drum ether and ether labeled "for anesthesia" exist, they would be revealed in the records which give an account of the foregoing observations. We realize that the subjective elements involved in the classification of anesthesias as "satisfactory" and "unsatisfactory" introduce variable factors with a considerable margin of error and that under ordinary circumstances opinions which are based on such estimates are vitiated by the bias of the anesthetist who knows the source of the ether. The significant point of this study is that the general appraisals were made entirely free of possible prejudices and preconceived notions regarding the relative value of different types of ether, since those who made them had no knowledge of the source of the ether.

TABLE 2.—*Types of Operations in the Cases in Which Ether Was the Sole Anesthetic Agent*

Operation	U. S. P. Drum Ether	Small Can Ether Labeled "for Anesthesia"
Tonsillectomies	6	8
Appendicectomies	1	1
Closed reduction (humerus)	0	1
Incision and drainage of abscess	4	4
Circumcisions	40	15
Cholecystectomies	0	3
Exploratory laparotomy	0	1
Dilation of rectal sphincter	0	1
Osteotomies	0	2
Prostatectomies	0	1
Mastoidectomies	2	4
Ventriculogram	0	1
Excision of periauricular gland	0	1
Excision of nevi, back and chest	0	1
Hernia	0	1
Thyroidectomy	0	1
Rib resection	0	1
Excision of cyst of elbow	0	1
Cystoscopies	3	2
Craniotomy	0	1
Laminectomy	1	0
Repair of hydrocele	1	0
Suture tendon	1	0
Resection of rectum	1	0
Muscle biopsy	1	0
Splenectomy	1	0

RESULTS

The analyses are based on the results obtained in 702 surgical patients. There were nine additional patients who were not included because the records were not sufficiently complete. In all, 349 patients received the drum ether and 353 the small can ether labeled "for anesthesia." Table 1 shows the distribution of the more common types of operations in patients who received drum ether and those who received small can ether labeled "for anesthesia," in the group of mixed anesthesias. Table 2 shows a similar analysis in the group of 113 cases in which ether was the sole anesthetic agent. While the types of operations were not equally distributed between the groups of patients receiving the two types of ether, there is a large enough representation of the more common operations in the two groups to justify the deductions that are made in this study.

TABLE 3.—*Distribution of Cases of Vomiting During the Induction and Maintenance Stages of Anesthesia*

Type of Anesthesia	Number of Cases
All anesthesias	30
Mixed anesthesias	29
Small can ether (mixed anesthesia)	19
Drum ether (mixed anesthesia)	10
Small can ether alone	1
Drum ether alone	0

Table 3 shows the distribution of the cases of vomiting during the induction and the maintenance stages of anesthesia in the total number of 702 patients. As may be seen, there were in all thirty patients who vomited during one or the other of these stages, and those receiving the small can ether labeled "for anesthesia" constituted twenty of these thirty cases. The number of cases is much too small for the results to have any statistical value, but as far as they go they do not give any suggestion that ether taken from a large drum is more irritant and more apt to induce vomiting than ether labeled "for anesthesia."

An attempt was made to ascertain whether there is any difference between the quantities of the two types of ether necessary for anesthesia. There are so many variable factors in an analysis of this kind that again the statistical value of the figures obtained in a relatively small group of cases is open to question, especially in the group in which ether was not the sole anesthetic agent. We examined the results in the group of 113 patients who received ether alone, and we present them for what they are worth. The amount was recorded in forty-four cases in which the small can ether labeled "for anesthesia" was used and in fifty-nine cases in which the drum ether was used. The amount of small can ether ranged in the different cases from 0.25 ounce to 10.5 ounces, with an average of 3.26 ounces. The amount of drum ether ranged from 0.25 ounce to 9 ounces, with an average of 2.16 ounces. It seems extremely unlikely that these figures represent actual differences in the anesthetic potency of the two types of ether. In any case, however, they lend no support to the view commonly expressed that ether taken from a can which has been opened some time loses much of its power to induce anesthesia.

An analysis of the data on the postoperative complications revealed comparable conditions with the two types of ether. There were nine deaths in the group receiving drum ether and seven deaths in the group receiving small can ether labeled "for anesthesia." The nature of the complication in the fatal as well as in the nonfatal cases is presented in table 4. The only death caused by a pulmonary complication occurred in the group which received the ether labeled "for anesthesia." Since it was due to a pulmonary infarction, it is extremely doubtful whether the ether was responsible for it. Excluding this case, there were no deaths in the whole series which could by any possibility be charged to either type of ether. There were six cases (all nonfatal) of postoperative pulmonary complications in the group receiving drum ether, and four cases (three nonfatal and one fatal) in the group receiving small can ether labeled "for anesthesia." If the two cases of bronchitis that occurred in patients who gave a history of chronic cough before the anesthetic was administered are omitted, the results in regard to postoperative pulmonary complications are essentially identical for the two types of ether.

Two additional groups of data have been analyzed, which present the most significant facts of the present study; namely, the chemical tests of the drum ether and the relative incidence of "satisfactory" and "unsatisfactory" anesthesias in the cases in which the two kinds of ether were given. The results of the chemical tests are presented in table 5. The contents of three 55-pound drums of U. S. P. ether had been transferred to twenty-five 5-pound tins, which were opened from time to time for the filling of the quarter-pound cans. The number of times the tins were opened and the intervals between the first opening and the last testing are stated in the table. Extremely delicate tests, capable of detecting traces of aldehydes and peroxides, gave negative results as long as sixty-eight days after the tins were first opened. Not one of the twenty-five tins showed signs of chemical deterioration of the ether. These confirmed the results obtained in the previous study.[1]

TABLE 4.—*Postoperative Complications with the U. S. P. Drum Ether and Small Can Ether Labeled "for Anesthesia"*

	U. S. P. Drum Ether	Small Can Ether Labeled "for Anesthesia"
Total number of postoperative pulmonary complications	15	10
Total number of deaths	9	7
Causes of death	1. Peritonitis and hemorrhage 2. Peritonitis 3. Peritonitis 4. Peritonitis 5. Carcinomatosis 6. Septicemia 7. Shock; death on second day after operation* 8. Gas gangrene 9. Intestinal obstruction	1. Shock and hemorrhage 2. Peritonitis 3. Coronary thrombosis 4. Heart failure 5. Pulmonary embolus 6. Uremia 7. Septicemia
Nature of nonfatal pulmonary complications	1. Septic pulmonary infarction with empyema 2. Pulmonary infarction 3. Bronchitis† 4. Bronchitis† 5. Bronchitis 6. Pulmonary atelectasis	1. Pleural effusion 2. Pulmonary infarction 3. Pneumonia with pleural effusion

* The patient was 44 years old; the operation, of two hours forty-three minutes' duration, for resection of a pancreatic tumor.

† These patients gave a history of a chronic cough before the operation.

In table 6 the incidence of "satisfactory" and "unsatisfactory" anesthesias in the cases in which U. S. P. drum ether was the agent is compared with that in the cases in which small can ether labeled "for anesthesia" was used. As has already been stated, these designations expressed a judgment of the anesthetist as

to the quality of the anesthesia made at the time of the operation and without knowledge of the source of the ether. It is clear from this table that the results are identical with the two kinds of ether.

The results obtained in three cases illustrate in a striking manner how differences in the behavior of the patient may be a source of error in judging the quality

TABLE 5.—*Results of Tests for Deterioration of Drum Ether After the Container Was Opened*

Number of the Five Pound Tin	Number of Times Tin Was Opened	Interval (Days) Between Date When Tin Was Filled and Date When Last Opened	Tests for Deterioration Products
	Ether from First Drum		
1	7	14	N
2	7	29	N
3	6	36	N
4	5	42	N
5	6	49	N
6	4	53	N
7	4	62	N
8	2	68	N
	Ether from Second Drum		
1	3	3	N
2	6	15	N
3	4	23	N
4	3	29	N
5	4	37	N
6	4	46	N
7	3	53	N
8	4	63	N
9	1	64	N
	Ether from Third Drum		
1	4	4	N
2	5	11	N
3	5	21	N
4	5	30	N
5	4	37	N
6	5	46	N
7	3	51	N
8	5	60	N

of an anesthetic agent. One of these came to operation on two occasions, during both of which small can ether labeled "for anesthesia" was administered. After the first operation performed for adhesions, recovery was uneventful, whereas after the second one, for intestinal obstruction, a postoperative pulmonary infarction developed. In the second patient a convulsive seizure developed during the induction stage, although the period of

TABLE 6.—*Incidence of "Satisfactory" and "Unsatisfactory" Anesthesias in Cases in Which U. S. P. Drum Ether Was Used with That in Cases in Which Small Can Ether Labeled "for Anesthesia" Was Used*

	U. S. P. Drum Ether		Small Can Ether Labeled "for Anesthesia"	
	Number	Per Cent	Number	Per Cent
Ether alone (113 cases)				
Total cases	62	..	51	..
Satisfactory	61	..	48	..
Unsatisfactory	1	..	3	..
Mixed anesthesia (589 cases)				
Total cases	287	..	302	..
Satisfactory	248	86.7	259	85.7
Unsatisfactory	39	13.3	43	14.0
All anesthesia (702 cases)				
Total cases	349	..	353	..
Satisfactory	309	88.5	307	86.9
Unsatisfactory	40	11.5	46	13.1

maintenance was even and uneventful. The ether in this case was from a quarter-pound tin labeled "for anesthesia" similar to that used in many other cases in this study. In the third case it was found impossible to obtain sufficient relaxation to perform a hemorrhoidectomy during anesthesia with nitrous oxide and 6 ounces of drum ether. Small can ether labeled "for anesthesia" was then substituted, but the anesthesia was discontinued when relaxation was not obtained after 6 ounces of this had been administered.

SUMMARY AND CONCLUSIONS

1. This study shows that U. S. P. ether as supplied at the present time in large metal containers does not undergo rapid chemical deterioration when the container is opened. Deterioration products were not found even sixty-eight days after the container was first opened. These results confirm a previous report.[1]

2. The study of 702 surgical anesthesias shows, furthermore, that the anesthetist is unable to distinguish the effects of U. S. P. drum ether from those of ether obtained in small cans labeled "for anesthesia," by the reactions of surgical patients, provided the anesthetist does not know the source of the ether he is using. Under those conditions, the anesthetist was unable to distinguish, for example, the ether in a quarter-pound tin labeled "for anesthesia" from ether taken from a 55-pound drum sixty days after it had first been opened.

3. The U. S. P. drum ether that we used in the present study was therefore as satisfactory for anesthesia as the ether in small tins labeled "for anesthesia." We believe that this statement is applicable to U. S. P. ether in large containers from at least five other sources, which, although not labeled "for anesthesia," was found in a previous study [1] to be similarly resistant to chemical deterioration after the containers were opened.

1300 York Avenue.

Clinical Notes, Suggestions and New Instruments

HYPERPARATHYROIDISM: CLINICAL PICTURE IN THE FAR ADVANCED STAGE

SECOND REPORT

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In 1931 we [1] presented a case of hyperparathyroidism that had advanced to such a stage that every bone showed cysts and decalcification, and some of the long bones, especially the femurs, almost complete demineralization. Owing to the numerous fractures early in the disease, and the extreme softness of the bones later, marked deformities had occurred, leaving the patient a hopeless cripple. When the decision had been made to do an exploratory operation with the objective of finding a parathyroid tumor, no other hope was entertained than to stop the progress of the disease. Not only was this hope realized but the patient has been restored to a degree that seemed unbelievable at the time of his first operation. Since the case forcefully illustrates what can be expected from the surgical treatment of hyperparathyroidism arising from an adenoma of this gland, the history subsequent to the first publication is presented.

SUMMARY OF CASE

J. M., a well developed man, 6 feet (183 cm.) tall and weighing 200 pounds (90.7 Kg.), was well up to the age of 21 (1925). A roentgenogram of the knee at that time showed beginning bone changes. A year later he sustained spontaneous fractures of both femurs and the right humerus. After six months of hospital treatment, he was discharged with the diagnosis of

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1. Quick, A. J., and Hunsberger, Ambrose: Hyperparathyroidism: The Clinical Picture in the Far Advanced Stage, J. A. M. A. **96**: 745 (March 7) 1931.

multiple giant cell tumors. Two years later, in June 1929, he was admitted to the Philadelphia General Hospital. At this time the skeletal system was distorted and deformed, and his total length was reduced to 45 inches (83.8 cm.). The pathologic changes were limited almost entirely to the osseous system, with cystic degeneration of every bone. The urine showed a fixed specific gravity, a trace of albumin, and a high concentration of calcium. The blood calcium was consistently high (average about 15 mg. per hundred cubic centimeters of blood) and the blood phosphorus low (about 3 mg.). Feb. 28, 1930, an exploratory operation was done and a parathyroid tumor was found. Because of the operative difficulties, it is probable that not all of the tumor was removed. After three months the blood calcium was again up to 15 mg. per hundred cubic centimeters. Superficial roentgen therapy was found ineffective. A second operation was done, June 5. A tumor somewhat larger than the first was found at the site of the first adenoma. Immediately after the operation a marked hypocalcemia occurred, and the patient was on the verge of tetany. This was controlled by calcium chloride and viosterol. The blood calcium became normal in eighteen days, and the patient seemed apparently cured.

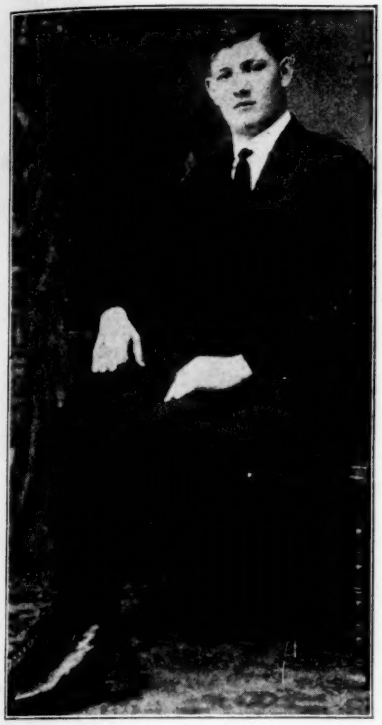

Fig. 1.—The patient before the onset of the disease, at the age of 17.

Fig. 2.—The patient three years after the onset of the disease, at the age of 26.

SUBSEQUENT HISTORY

Since it seemed certain that the disease had been permanently arrested, efforts were made to correct some of the patient's deformities, and the first operation was done in February 1931. An incision was made over the anterior surface of the right leg over the region of the greatest curvature. Although it was planned to straighten the bones by means of an osteotome, it was found that this was unnecessary and that manual manipulation alone sufficed. It was interesting that these long bones were not only angulated but actually twisted. On manipulation there was no cracking or breaking, merely a crunching, as of grinding together loose hard gravel. The leg was put in a plaster cast and the cast reapplied in May. In August the left tibia and fibula were corrected and reset.

Since the blood calcium again became abnormally high, another exploratory operation was indicated and done in March 1932. An incision was made through the old scar, and on retraction of the tissues a tumor was exposed, which was removed by blunt dissection. The tumor was irregular and lobulated and measured 3 by 2 by 1 mm. Microscopic examination of the section of the tumor showed essentially the same structure as the two previous tumors. Following the operation no serious drop in blood calcium occurred. It was 11.9 mg. immediately before the operation and 8 mg. the following day.

With the prospects of a permanent cure, the patient was fitted with a pair of braces, January 1933, and by the end of July was able with the aid of crutches to take daily walks. He was discharged from the hospital October 10. At this time the blood calcium was 10.4 mg. and the roentgenographic report stated that there was a marked cystic condition of all the bones but that evidence of recalcification and new bone formation was present.

Fig. 3.—The patient three years after the final and complete removal of a parathyroid tumor. He is now able to walk with the aid of crutches.

COMMENT

This case has been exceedingly instructive not only because it has demonstrated one of the most advanced stages of hyperparathyroidism but also because it has emphasized the effectiveness of treatment. It required three operations and the removal of three tumors before the blood calcium remained normal. Whether the two subsequent tumors originated from the primary adenoma or developed separately cannot be decided definitely, but it is probable the first supposition is the more likely. The case emphasizes the need for complete removal of the tumor and the advisability of a second exploratory operation if signs of hyperparathyroidism persist.

Although it is unfortunate that the disease was not arrested until such extreme deformities had occurred, there can be no question that the patient has been greatly benefited. It is doubtful whether the patient would still be living without the operations. Even in the six months at the hospital before the first operation, the rapid progress of the disease was easily discernible clinically and by the increasing decalcification of all the bones. It has been possible to stop the progress of the disease and to correct somewhat the deformities. Thus, this patient, who was formerly a helpless bedridden creature, has been sufficiently restored so that he no longer requires hospital care.

Special Article

GLANDULAR PHYSIOLOGY AND THERAPY

THE PHYSIOLOGY AND PRINCIPAL INTERRELATIONS OF THE THYROID

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NOTE.—*This article and the articles in the previous issues of* THE JOURNAL *are part of a series published under the auspices of the Council on Pharmacy and Chemistry. Other articles will appear in succeeding issues. When completed, the series will be published in book form.*—ED.

The greatest advances in thyroid physiology during the last decade have been made in the chemistry of thyroxine [1] and in the interrelations of the thyroid with other organs both of internal and of external secretion, although in the latter field only a good beginning has as yet been made.

The fact that the principal function of the thyroid is to increase oxidative processes in the body further indicates that all body activities are influenced by the state of thyroid function and vice versa. Although the major serious disabilities due to disturbance in thyroid function are known, it is to be expected that as the interrelations are further worked out many lesser disabilities may be proved to have a definite relation to the thyroid.

In reviewing the function of the thyroid, certain general facts must be borne in mind. First, the thyroid ancestrally belongs to the alimentary tract. Second, the organ is endowed with tremendous capacities for increasing and decreasing its functional activity, as indicated by changes in weight, microscopic appearance, iodine content and blood supply. Third, hyperplasia indicates hyperactivity but not necessarily hyperfunction. Myxedema and cretinoid states may occur in individuals and animals with typical hyperplasia. It is more accurate to consider all functional hyperplasia as indicating relative or absolute iodine deficiencies and colloid goiter as the recovered, resting and physiologically normal stage.[2]

EFFECTS OF REMOVAL

Definite knowledge of the physiology of the thyroid may be said to have begun with Sir William Gull's report in 1874.[3] He definitely connected atrophy of the thyroid, which he had observed in several middle aged women, with loss of hair, thickening and dryness of the skin, and great loss of mental and physical vigor. William Ord designated this condition as myxedema in 1878 because he thought that the thickening of the subcutaneous tissues was due to mucin formation. In 1882 the Reverdin brothers [4] and in 1883 Theodore Kocher [5] reported on the effects of total thyroidectomy for the cure of goiter in man, thus experimentally confirming Gull's discovery. The Reverdin brothers designated the condition they had produced as operative myxedema and Kocher as cachexia strumipriva. Following these reports many species of animals were subjected to thyroidectomy. Thyroidectomized dogs and cats usually developed parathyroid tetany, while in rabbits, sheep or goats very little obvious effects were noted, and it was not until the rediscovery of the external parathyroids in the rabbit by Gley [6] in 1891 that a real separation of parathyroid and thyroid functions was possible. Gley's observation disproved the prevailing view that the acute symptoms which frequently followed thyroidectomy were due to thyroid removal. Since 1891 many species of animals have been subjected to thyroidectomy in which the parathyroid factor has been excluded. In 1895 Magnus-Levy,[7] using the newly developed calorimeter, discovered that in Gull's disease the heat production was lowered as much as 40 per cent. Later a similar lowering of metabolism was found to be the characteristic effect of thyroidectomy in animals. The fall in heat production begins in most mammals between the fifth and the seventh day after thyroidectomy; in the rabbit this reaches its lowest level (from 30 to 40 per cent) between the twentieth and the thirtieth day, and in man about the sixtieth day. This low level of metabolism may be maintained for years, or as accessory thyroids or fragments regenerate the metabolism may rise, but usually not to a normal level. While qualitatively the symptoms following thyroidectomy are similar in both young and adult animals, the visible manifestations are strikingly more prominent in animals thyroidectomized during the growing period. On inspection, adult rabbits, sheep and goats may show very little change, which led the earlier workers to the belief that thyroidectomy was without much effect. Measurements of heat production in such animals, however, show the usual marked decrease. In the young this lowering of metabolism leads to stunted physical, mental and sexual development. The thyroid, therefore, appears to be not essential for vegetative life.

BIOCHEMISTRY

The next most important advance in thyroid physiology was the demonstration in 1891 by Murray [8] of the remarkable curative effects of injections of a glycerin extract of fresh sheep thyroid in a case of Gull's disease. (This was an advanced case of five years' duration when treatment with thyroid was begun. The patient, a woman, died in 1919 at the age of 74, health having been maintained on thyroid medication for twenty-eight years.[9]) Murray's observation was quickly followed in 1892 by the independent observations of Howitz,[10] Mackenzie [11] and Fox [12] that thyroid substance, whether fresh, dried or cooked, was equally efficacious when administered by mouth.

In 1894 Emminghaus and Reinhold [13] showed that thyroid feeding produced a marked reduction in the size of certain types of goiter. These discoveries greatly stimulated the efforts of biochemists to isolate the active substance. Attempts to demonstrate iodine in the thyroid gland had been made many times since Coindet in 1820 first demonstrated its therapeutic value

From the Montefiore Hospital.

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in the treatment of goiter, but owing to faulty methods these efforts failed. The new stimulation aroused by Murray's observation prompted the work of Hutchison [14] in Great Britain, Fränkel [15] in Austria, Drechsel [16] and Oswald [17] in Switzerland and Baumann [18] and his co-workers in Freiburg, which culminated in the announcement by Baumann in 1895 that iodine in a firm organic combination was a normal constituent of the mammalian thyroid. He obtained by acid hydrolysis (10 per cent sulphuric acid) a brownish powder containing as much as 9.3 per cent of iodine, which he named iodothyrin. Later work showed that this method destroyed most of the specific iodine compound. Baumann and his pupils showed that iodine was present in the thyroid of dogs in variable amounts and that feeding iodine increased the store. They also showed that a meat diet reduced the iodine store. Oswald [19] in 1899 observed that the iodine was contained in the colloid and that the colloid was a globulin; he introduced the terms "thyroglobulin" and "iodothyroglobulin." He showed that the iodine content of the thyroid varied in general with the amount of visible colloid. The studies of Marine and Williams [20] and Marine and Lenhart [21] further advanced the knowledge of the relation of iodine to thyroid structure by showing that the iodine store in general varied inversely with the degree of active hyperplasia; in extreme degrees of thyroid hyperplasia the iodine store was exhausted. At that time the opinion was widely held that iodine was excreted into the thyroid gland as part of an alleged detoxicating function. The globulin content of the thyroid is roughly the same whether the gland is hyperplastic or colloid. In the hyperplastic state the thyroglobulin is in the cells and is iodine poor, while in the colloid state the thyroglobulin is mainly in the follicles and is usually iodine rich.

The maximum iodine store in the mammalian thyroid may be raised to 5 or 6 mg. per gram of dry substance. In the accompanying table the relation of the iodine store to histologic structure of several species is given.

Relation of Iodine Store to Histologic Structure

	Normal	Hyperplastic Stage			Colloid or Resting Stage
		Early	Moderate	Marked	
Man	2.17*	0.88	0.71	0.32	2.00
Dog	3.32	0.62	0.37	0.11	1.99
Sheep	2.47	....	0.40	0.01	3.00
Ox	3.46	1.65	....	0.19	....
Pig	2.51	1.10	....	....	2.35

* Iodine in milligrams per gram of dried gland.

The normal human thyroid weighs from 20 to 25 Gm. and the maximum iodine storage is from 20 to 25 mg., while the average normal total store is from 10 to 15 mg. Fenger [22] showed that iodine was normally present in the fetal thyroid; he was able to demonstrate it in the fetal calf as early as the third month. There is also a definite seasonal variation in the iodine store; this is lower in the early spring and higher in the late summer.[23] Iodine fed to pregnant mothers is quickly stored in the fetal thyroid. Surviving thyroid in vitro [24] shows the same marked ability to take out and store iodine from the circulating fluid as is seen in the thyroid in vivo. So far as is known, the thyroid is the only organ capable of elaborating an iodine-containing hormone. Iodine is present in the anterior pituitary and in the ovary in significant amounts, but owing to the close physiologic relationship between anterior pituitary, ovary and thyroid its presence there could be of thyroidal origin.

Further attempts by many workers to isolate the iodine-containing hormone resulted in Kendall's [25] announcement in 1916 that by means of alkaline hydrolysis he had isolated a crystalline compound containing 65 per cent of iodine, which produced the same pharmacologic effects as desiccated thyroid. His attempts to determine its structure were unsuccessful. In 1926 Harington,[26] by improving the method of extraction from the thyroid, was able to accumulate sufficient quantities of thyroxine to determine its empirical formula as $C_{15}H_{11}O_4NI_4$ and its structural formula as 3;5;3¹;5¹ tetraiodothyronine. This work established that the mother substance of natural thyroxine is *l*-tyrosine. In 1927 Harington and Barger [27] synthesized this compound and showed that it had the same pharmacologic properties as natural thyroxine. Thyroxine appears to be only the active chemical group of the true hormone, which is probably iodothyroglobulin (Oswald). There are slight but definite pharmacologic differences (especially time) between thyroxine and iodothyroglobulin.

Harington also showed that the acid soluble fraction or physiologically inactive iodine noted earlier by Kendall was di-iodotyrosine. Foster [28] (1929) confirmed this and was able to recover 30 per cent of the total thyroid iodine as di-iodotyrosine. Harington has estimated that on an average 40 per cent of normal thyroid iodine is in the form of thyroxine and 60 per cent as di-iodotyrosine. Obviously in abnormal states of the thyroid there must be great variations in the proportions of these two compounds present, for the reason that di-iodotyrosine, though physiologically inactive, is a stage in the synthesis of thyroxine in the thyroid. The synthesis of thyroxine requires hours, while the storage of iodine in the thyroid, both in vivo and in vitro, is almost instantaneous. The form in which iodine is so quickly stored has not been determined. It is, however, firmly bound and prolonged perfusion does not wash it out if the cells are surviving (Marine and Feiss). The first evidence of thyroxine formation in the dog's thyroid, using the Gudernatsch tadpole test, was obtained by Marine and Rogoff [29] in about eight hours after the intravenous injection of potassium iodide.

As already mentioned, the most important single contribution to knowledge of the physiology of the thyroid was obtained by Magnus-Levy [7] in 1895, when he demonstrated that in Gull's disease the metabolism was greatly reduced and that treatment with desiccated

14. Hutchison, R.: J. Physiol. **20:** 474, 1896; Practitioner **66:** 402, 1901.
15. Fränkel, S.: Wien. med. Blätte **18:** 759, 1895.
16. Drechsel, E.: Centralbl. f. Physiol. **9:** 705, 1895-1896.
17. Oswald, A.: Beitr. z. chem. Phys. u. Path. (Hofmeister's) **2:** 545, 1902.
18. Baumann, E.: Ztschr. f. physiol. Chem. **21:** 319, 1896.
19. Oswald, A.: Ztschr. f. physiol. Chem. **32:** 121, 1901.
20. Marine, David, and Williams, W. W.: The Relation of Iodine to the Structure of the Thyroid Gland, Arch. Int. Med. **1:** 349 (May) 1908.
21. Marine, David, and Lenhart, C. H.: Further Observations on the Relation of Iodine to the Structure of the Thyroid Gland in the Sheep, Dog, Hog and Ox, Arch. Int. Med. **3:** 66 (Feb.) 1909.
22. Fenger, F.: J. Biol. Chem. **14:** 397, 1913.
23. Seidell, A., and Fenger, F.: J. Biol. Chem. **13:** 517, 1913.
24. Marine, David, and Feiss, H. O.: J. Pharmacol. & Exper. Therap. **7:** 557, 1915.
25. Kendall, E. C.: Collected Papers of the Mayo Clinic, **8:** 513, 1916.
26. Harington, C. R.: Biochem. J. **20:** 293, 300, 1926.
27. Harington, C. R., and Barger, G.: Biochem. J. **21:** 169, 1927.
28. Foster, G. L.: J. Biol. Chem. **83:** 345 (Aug.) 1929.
29. Marine, David, and Rogoff, J. M.: J. Pharmacol. & Exper. Therap. **8:** 439 (Aug.) 1916.

thyroid raised the metabolic rate to normal or above. Magnus-Levy also discovered that the respiratory exchange in exophthalmic goiter was notably increased. Friedrich Müller [30] two years earlier had shown that the nitrogen metabolism was significantly increased in exophthalmic goiter. The most characteristic physiologic effects of iodothyroglobulin or its active chemical group thyroxine is that it increases, after a latent period of twelve hours or more, the oxidation in the body of proteins, fats and carbohydrates and that it also increases the excretion of certain minerals, notably calcium and magnesium.[31] H. Zondek has shown that calcium diminishes the effect of thyroxine on tadpoles. The means by which thyroxine increases oxidative processes in the cells is unknown. Rohrer [32] first showed that the oxygen consumption of minced liver, kidney and muscle of rats previously fed with thyroid substance was increased, while Ahlgren [33] showed that isolated muscle from thyroidectomized animals consumed much less oxygen than normal. There is considerable evidence that epinephrine and thyroxine may work together in this process.

Gudernatsch [34] discovered that when small amounts of thyroid substance were fed to tadpoles there was a rapid loss in weight and metamorphosis in from four to five days. This test still remains the most sensitive test for the thyroid hormone. Other forms of iodine may hasten metamorphosis to a slight degree but never to a degree that could be confused with thyroxine action. The acetonitrile (methyl cyanide) test [35] depends on the protection that the thyroid hormone gives to white mice against this drug. It is not specific, since thyroid feeding decreases the resistance of rats, rabbits and guinea-pigs to acetonitrile.

The effect of thyroid administration on the heart and circulation has been studied by von Fürth,[36] von Cyon,[37] Oswald [38] and more recently by Carter and his co-workers.[39] Purified solutions of iodothyroglobulin injected intravenously cause only slight lowering of blood pressure, but the heart rate is notably increased after a latent period. Oswald believes that thyroid increases the irritability of all sympathetic nerve endings. The more recent experiments of Lewis and McEachern [40] indicate that the tachycardia of thyroxine-treated rabbits continues for hours after the heart has been transferred to Ringer-Locke's solution. The relation of thyroid to antibody immunity has been extensively studied and while the results are somewhat contradictory they do not warrant any direct association of thyroid with antibody formation. However, the lowering of the iodine store and the tendency to thyroid hypertrophy in many of the infectious diseases clearly indicate that the thyroid is an important indirect factor in resistance to infections.

DIET

Diet notably affects both the structure and the chemistry of the thyroid. Baumann in 1896 and many others have noted in dogs that fresh meats cause hypertrophy of the thyroid, while sea fish increase the iodine store and reduce the size of the gland. Watson also found that a meat diet caused hypertrophy and hyperplasia of the thyroid cells in rats. Marine and Lenhart showed that liver, particularly pig's liver, was the most potent of a great variety of meats in causing thyroid hypertrophy in dogs and cats and also that this food was an important factor in the causation of goiter in brook trout. McCarrison and later Mellanby have shown that fats also promote thyroid hypertrophy. As thyroid hyperplasia is now believed to be secondary to the depletion of the iodine store, these facts indicate that diets rich in proteins and fats increase the rate of discharge of thyroxine and suggest that thyroid activity is more necessary in the oxidation of fats and proteins than of carbohydrates. Inanition brings about involution of the thyroid; i. e., a decrease in the size of the epithelial cells, a decrease in the blood supply, and an increase in the colloid and in the iodine store—evidence of decreased functional activity.

The experiments of Baumann and Hunt [41] demonstrated that the thyroid secretion is necessary for the specific dynamic action of foods. In thyroidectomized rabbits it disappears completely after about sixty-five days and can be restored in such rabbits by feeding desiccated thyroid.

INTERRELATIONS

This is both the oldest (sex glands) and the newest field of thyroid physiology, and in recent years important contributions have been made, especially as regards the relation of the thyroid to the anterior pituitary.

Thyroid-Pituitary.—The major contributions in this field are those of Smith [42] and Allen,[43] who first devised methods of removing the pituitary in tadpoles and in rats (Smith) without injuring adjacent brain structures, and by means of these methods demonstrated that the anterior pituitary was truly a master gland in that it controlled the functional state of many organs (thyroid, sex glands, adrenals and the like).

It had long been known to students of goiter that individuals or animals with large parenchymatous goiters (Nièpce,[44] Schönemann [45]) have greatly enlarged anterior pituitaries. Rogowitsch [46] was the first experimentally to produce hypertrophy of the anterior pituitary by removal of the thyroid in rabbits. The pituitary hypertrophy after thyroidectomy is much greater, the younger the animal used. Doubtless many of the failures to confirm Rogowitsch's observation are due to the fact that adult animals were used. Histologically all elements of the anterior pituitary become hypertrophic, but the most striking single change is the disappearance of the eosinophil granules. Smith first noted in tadpoles and later in rats that hypophysectomy caused a marked involution of the thyroid; the injection of fresh anterior pituitary substance restored such atrophic thyroids to normal and even produced hypertrophy in these glands. Schockaert, Uhlenhuth, Loeb and many others showed that emulsions of fresh anterior pituitary, acid and alkaline extracts of anterior pituitary powder in normal young susceptible animals

30. Müller, Friedrich: Deutsch. Arch. f. klin. Med. **51**: 335, 1893.
31. Aub, J. C.; Bauer, W.; Heath, C., and Ropes, M.: J. Clin. Investigation **7**: 97 (April) 1929.
32. Rohrer, A.: Biochem. Ztschr. **145**: 154, 1924.
33. Ahlgren, G.: Skandinav. Arch. Physiol. (supp.) **47**: 1, 1925.
34. Gudernatsch, J. F.: Am. J. Anat. **15**: 431, 1914.
35. Hunt, Reid: J. Biol. Chem. **1**: 33, 1905.
36. von Fürth, Otto: Ergebn. d. Physiol. **8**: 524, 1909.
37. von Cyon, E.: Arch. f. d. ges. Physiol. (Pflüger's) **138**: 575, 1911.
38. Oswald, A.: Arch. f. d. ges. Physiol. (Pflüger's) **164**: 506; **166**: 169, 1916.
39. Andrus, E. C., and McEachern, D.: Cardiac Manifestations of Hyperthyroidism, Am. J. M. Sc. **183**: 741 (June) 1932.
40. Lewis, J. K., and McEachern, D.: Bull. Johns Hopkins Hosp. **48**: 228 (April) 1931.
41. Baumann, E. J., and Hunt, L.: J. Biol. Chem. **64**: 709 (July) 1925.
42. Smith, P. E.: Proc. Soc. Exper. Biol. & Med. **16**: 81, 1918-1919; Am. J. Anat. **45**: 205 (March) 1930.
43. Allen, B. M.: Biol. Bull., Boston **32**: 117, 1917.
44. Nièpce, B.: Traité du goitre et du crétinisme, Paris, 1851.
45. Schönemann, A.: Virchows Arch. f. path. Anat. **129**: 310, 1892.
46. Rogowitsch: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **4**: 453, 1889.

(adults are much less reactive and there are great species differences as well [47]) causes a marked hypertrophy and hyperplasia of the thyroid, beginning within a few hours after injection. There is a rapid loss of the iodine store in the gland; there is an increase in blood iodine, in the metabolic rate, and in the excretion of calcium and creatine (Collip), and exophthalmos develops.

This thyroid stimulating substance in the anterior pituitary must be sharply distinguished from several other specific factors of the anterior pituitary which similarly stimulate body growth, the gonads, the adrenal cortex and probably many other organs as well. Loeser,[48] Anderson and Collip [49] and others have separated the specific thyroid stimulating factor from the other factors and confirmed and extended previous work. It was early observed by many workers that the daily administration of the thyrotropic factor to rats, guinea-pigs or rabbits brought about in from thirty to forty days a resistance to the thyroid stimulating factor, and the thyroid slowly regressed to its quiescent or colloid state again.[49a] (This immunity or resistance has been demonstrated for other "tropic" factors of the anterior pituitary as well.) Collip and Anderson [50] have shown that the serum of such recovered animals contained an antisubstance which, while not preventing the thyroid hyperplasia following the injection of the thyrotropic factor, did prevent the characteristic increase in metabolism, calcium excretion and the like. It was early pointed out that the symptoms temporarily produced in laboratory animals by injection of the thyrotropic factor were strikingly similar to those of exophthalmic goiter in man, and this suggests that possibly exophthalmic goiter occurs when the capacity to produce antihormone is impaired. Sufficient work already appears to have been done with the thyrotropic factor to justify the conclusion that the thyroid may be directly stimulated only by this anterior pituitary substance. Exhaustion of this factor is probably the immediate cause of the thyroid atrophy in some cases of Gull's disease. On the other hand, the cause of endemic cretinism in animals, and probably in man as well, is primarily thyroid insufficiency since it can be cured and prevented in a single gestation by the administration of iodine.

The relation of thyroid secretion to the development of the exophthalmos of exophthalmic goiter has long been a controversial question. Prevailing opinion favored the view that it was in some way connected with hypersecretion by the thyroid. Recent work by Marine and Rosen [51] has shown that such a view must be modified, since thyroidectomy notably facilitates the production of exophthalmos. At least two factors are necessary for its production: (1) a relative or absolutely deficient thyroid secretion and (2) an excess of the thyrotropic factor. This would explain why iodine administration with intact thyroid or desiccated thyroid administration after thyroidectomy prevents the occurrence of exophthalmos, even when large amounts of the thyrotropic factor are administered. This would also explain why thyroid insufficiency alone, as in Gull's disease, is usually not associated with exophthalmos, because the thyroid atrophy in this disease appears to be primarily dependent on an insufficiency of the thyrotropic factor. Recently we have found a great diminution in the thyroid stimulating factor of the anterior pituitary from a patient with Gull's disease. The thyrotropic factor of the anterior pituitary stimulates thyroid transplants in any part of the body to approximately the same degree that the nontransplanted thyroid is stimulated. Recently Eitel, Krebs and Loeser [52] have demonstrated that the thyrotropic factor stimulates surviving thyroid cells in vitro. Such studies further confirm the view that the thyrotropic factor acts directly on the gland cells and that specific or intact nerve connections are unnecessary, either for secretory or for excretory activity of the gland.[53] The pituitary influence also probably explains why normally the growth of thyroid transplants or the degree of thyroid regeneration is in proportion to the amount of thyroid removed.

Thyroid-Sex Glands.—This interrelationship has been recognized for centuries because of the enlargement of the thyroid during menstruation and pregnancy and the increased frequency of goiter during puberty, pregnancy and the menopause. It is known that the ovary and hypopophysis stand next to the thyroid as regards iodine store. The nature of this relationship is still uncertain, but the recent work with the pituitary suggests that this organ is the necessary intermediate. Total removal of the sex glands in the dog, rabbit and rat usually leads to a slow involution of the thyroid in about one month and to slight reduction of total metabolism, indicating a depression of thyroid function. Several observers have reported a slight hypertrophy immediately after gonadectomy. Abelin [54] and others have shown that thyroid feeding has an inhibitory effect on estrus. Da Costa and Carlson [55] found that desiccated thyroid in large doses retarded sexual maturation of white rats of both sexes while small doses of thyroid tended to accelerate it. Schockaert [56] noted that emulsions of anterior hypophysis caused a greater hypertrophy of the accessary male sex glands after thyroidectomy than before. Many observers have noted that the prolonged injection of estrogenic substance causes a flattening of the thyroid epithelium and an increase in colloid; a few have reported opposite effects. The more recent observations of Pincus and Werthessen [57] and of Tagliaferro [58] may correlate these conflicting results. The latter found that thyroid enlargement occurred in rats and guinea-pigs following injections of estrogenic substance continued for five or ten days, whereas when the injections were continued for twenty days or more the opposite effect (involution) was observed.

It appears that the effects of the thyroid on the gonads and vice versa could be explained as effects

47. Aron, M.: Compt. rend. Soc. de biol. **110:** 716 (July) 1932.
48. Loeser, A.: Arch. f. exper. Path. u. Pharmakol. **163:** 530, 1931.
49. Anderson, Evelyn M., and Collip, J. B.: Thyreotropic Hormone of Anterior Pituitary, Proc. Soc. Exper. Biol. & Med. **30:** 680 (Feb.) 1933.

49a. This discovery makes it necessary to distinguish between activators and true internal secretions. Since Bayliss and Starling first applied the term "hormone" to one of these activators, secretin, it would be logical to reserve the term for those factors which excite various organs to increased secretion of their specific products and against which the body produces antihormones.

50. Collip, J. B., and Anderson, Evelyn M.: Lancet **1:** 76 (Jan. 13) 1934.
51. Marine, David, and Rosen, S. H.: Am. J. M. Sc. **188:** 565 (Oct.) 1934.
52. Eitel, H.; Krebs, H. A., and Loeser, A.: Klin. Wchnschr. **12:** 615 (April 22) 1933.
53. Manley, O. T., and Marine, David: Proc. Soc. Exper. Biol. & Med. **12:** 202, 1915.
54. Abelin, I., and Wiedmer, E.: Arch. f. exper. Path. u. Pharmakol. **166:** 584, 1932.
55. Da Costa, E., and Carlson, A. J.: Am. J. Physiol. **104:** 247 (April) 1933.
56. Schockaert, J.: Compt. rend. Soc. de biol. **108:** 431 (Oct. 23) 1931.
57. Pincus, G., and Werthessen, N.: Am. J. Physiol. **103:** 631 (March) 1933.
58. Tagliaferro, P.: Folia gynaec. **30:** 597, 1933.

mediated through the anterior pituitary. There is abundant evidence that the response of the pituitary to thyroidectomy is not limited to stimulating an increased production of the thyrotropic hormone but that there is an increase in the growth hormone and the gonadotropic factors as well; vice versa, a depression of the thyrotropic factor by the administration of thyroxine probably depresses the gonadotropic factor. In rabbits that have been thyroidectomized at puberty (4 to 5 months) there is frequently noted an increase in sexual activity. So also injecting large doses of estrogenic substance appears to decrease the amount of gonadotropic factor produced by the pituitary as well as depressing the thyroid glands. These effects are understandable if one assumes that the same pituitary cell produces more than one hormonic factor; there is evidence that the eosinophilic cells may be responsible for the secretion of the thyrotropic and growth promoting factors.

Thyroid-Thymus.—Gudernatsch [34] noted that thymus feeding greatly delayed the onset of metamorphosis in tadpoles and that it offered some protection against thyroid feeding. Hoskins [59] obtained an increase in weight of the thymus at birth in guinea-pigs whose mothers were fed desiccated thyroid. Thyroidectomy definitely hastens thymus involution.[60] Feeding desiccated thyroid causes regeneration of such atrophic thymuses. In conditions in which thyroid activity is increased, as in exophthalmic goiter and acromegaly, there is usually thymus hypertrophy. These effects could be interpreted as indicating some kind of antagonism between the thyroid and the thymus.

Thyroid-Pancreas.—Falta [61] (1905) thought that the thyroid and pancreas were antagonistic. He found that thyroidectomized dogs were less sensitive to the hyperglycemic action of epinephrine than normal animals. This has been confirmed by Bodansky [62] (1923) and by Burn and Marks [63] (1925). Bodansky reported that thyroidectomized sheep were more sensitive to insulin than normal animals. This observation has been generally confirmed. Conversely, it has been shown that feeding thyroid or thyroxine to thyroidectomized rabbits decreases the hypoglycemic action of insulin. Bodansky believes that the thyroid hormone promotes glycogenolysis and that it is because of this action that the hypoglycemic action of insulin is increased after thyroidectomy and decreased by thyroid feeding. The effect of thyroid feeding probably is due in part to its sensitizing effect on epinephrine stimulation of the sympathetic nervous system.

Thyroid-Liver.—Liver injury in exophthalmic goiter (mild, moderate and severe fibrosis, depletion of glycogen and, in severe cases, focal necrosis, jaundice and subacute yellow atrophy), although long known, has attracted more attention of late. Gerlei [64] obtained some confirmatory evidence of this sequence experimentally in the rabbit. He found that the injection of 4 mg. of thyroxine daily (rabbits are very susceptible to the action of thyroxine) usually led to death in from five to seven days. These animals showed severe degenerative lesions in the liver, beginning with cell necrosis in the central portion of the lobule and extending peripherally and involving the whole lobule. With the fusion of these lobular necroses large areas may be affected, and this condition may resemble acute yellow atrophy. Experimentally it has been abundantly confirmed that prolonged excessive thyroid feeding greatly reduces the glycogen store in the liver. This depletion of glycogen appears to depend on its increased utilization rather than on any immediate impairment of storage capacity by the liver. Conversely, thyroidectomy increases the glycogen storage in rabbit liver leading to a characteristic nutmeg appearance. Epinephrine probably is a necessary adjunct in the increased mobilization of glycogen in hyperthyroid states.

Thyroid-Chromaffin System.—Epinephrine markedly constricts the thyroid veins following its intravenous injection.[65] Eppinger, Falta and Rudinger [66] first suggested an interrelationship. They assumed that epinephrine directly stimulated the thyroid gland. In 1911 Asher and Flack [67] showed that the blood pressure response in rabbits to a given dose of epinephrine was greater after stimulation of the thyroid nerves with intact thyroid than before. This has received confirmation from several sources, particularly by Cannon and his co-workers. Oswald [68] has shown that a similar increase in the blood pressure response to epinephrine may be obtained by the intravenous injection of iodothyroglobulin and that the effect is proportional to the iodine content of the thyroglobulin. Blau and McNamara [69] obtained the same effect by using thyroxine; Bergwall and Kuschinsky [70] obtained this effect with thyroxine after adrenalectomy. The Goetsch epinephrine test in exophthalmic goiter is a clinical application of this increased sensitiveness to epinephrine. All these observations would support the original view of Asher and Flack that the thyroid hormone increases the irritability of the sympathetic nervous system or sensitizes in some way the tissues innervated by it, so that they are more susceptible to stimulation by epinephrine. On the other hand, Zunz and La Barre [71] have reported that injections of from 1 to 3 mg. of thyroxine in dogs caused a gradual hyperglycemia in the course of from three to six hours and that this did not occur when the adrenal veins were ligated just prior to the injection of thyroxine. These observations would suggest a direct stimulation of the chromaffin system by thyroxine.

Thyroid-Adrenal Cortex.—Golyakowski [72] observed an increased output of carbon dioxide in dogs following the mass ligation of most of the adrenal vessels. Marine and Baumann,[73] working with rabbits, reported a definite increase in heat production in thirty-one out of thirty-nine rabbits from which both adrenal glands were partially removed, and in six out of fifteen rabbits whose adrenal function had been crippled by freezing

59. Hoskins, R. G.: Am. J. Physiol. **26:** 426, 1910.
60. Jeandelize, P.; Lucien, M., and Parisot, J.: Compt. rend. Soc. de biol. **66:** 942, 1909. Marine, David; Manley, O. T., and Baumann, E. J.: J. Exper. Med. **40:** 429 (Oct.) 1924.
61. Falta, W.: Med. Klin. **6:** 40, 1910.
62. Bodansky, A.: Proc. Soc. Exper. Biol. & Med. **21:** 46, 1923.
63. Burn, J. H., and Marks, H. P.: J. Physiol. **60:** 131 (July) 1925.
64. Gerlei, F.: Ann. d'anat. path. **10:** 555 (May) 1933.
65. Gunning, R. E. L.: Am. J. Physiol. **44:** 215 (Sept.) 1917.
66. Eppinger, H.; Falta, W., and Rudinger, C.: Ztschr. f. klin. Med. **66:** 1, 1908.
67. Asher, L., and Flack, M.: Ztschr. f. Biol. **55:** 83, 1911.
68. Oswald, A.: Centralbl. f. Physiol. **30:** 509, 1915.
69. Blau, N. F., and McNamara, Helena: Proc. Soc. Exper. Biol. & Med. **27:** 997 (June) 1930.
70. Bergwall, A., and Kuschinsky, G.: Arch. f. exper. Path. u. Pharmakol. **162:** 169, 1931.
71. Zunz, E., and La Barre, J.: Compt. rend. Soc. de biol. **110:** 95 (May 20) 1932.
72. Golyakowski, S. I.: Vrach. **20:** 1017, 1899.
73. Marine, David, and Baumann, E. J.: J. Metab. Research **2:** 1 (July) 1922.

the glands. This increase in heat production usually began between the third and the sixth day following adrenal injury and lasted from a few days to a month or more. In a few cases heat production was increased more than 60 per cent above normal. It was felt that infection and trauma could be excluded. If, however, the thyroid gland was removed and the metabolism allowed to fall to the myxedema level prior to the injury of the adrenal glands, this increase in heat production did not occur. Scott [74] obtained a few instances of increased heat production in cats with injured adrenals, but it was difficult to get sufficient but sublethal injury of the adrenal in this animal. Davis and Hastings [75] have recently shown that adrenalectomized mice, after a latent period of about forty days, show an increased total metabolism and an increase in the metabolism of excised abdominal muscle as well. They also confirm the observations of Marine and Baumann that a previous thyroidectomy prevents this rise in metabolism. The most logical interpretation of these results is that the adrenal cortex (and the sex glands), acting through the anterior pituitary, normally exercise some regulatory or inhibitory control over thyroid function; when this control is sufficiently depressed or withdrawn, the activity of the thyroid is temporarily increased. The only substance yet known common to both adrenal cortex and sex glands that appears capable of depressing the thyroid function by way of the pituitary is estrogenic substance, and this possibility is being further investigated.

It should also be pointed out that there is some evidence that the adrenal cortex exercises an inhibitory control over other organ functions as well as the thyroid; for example, the increased sexual activity and priapism that commonly occurs in rabbits and rats a few days after adrenalectomy.

In this connection also the normal involutionary destruction of the reticular and fascicular zones of the adrenal cortex in infants beginning about the eighth day after birth should be mentioned.[76]

The demonstration by Smith that a somewhat similar lesion regularly occurs in the adrenal cortex after hypophysectomy and the demonstration by Collip, Anderson and Thomson [77] of a specific adrenotropic factor in the anterior pituitary suggest that this normal adrenal involution in infants is due to the withdrawal of the maternal adrenotropic factor. The physiologic significance of the relatively large adrenal cortex of human fetuses and its partial destruction beginning in the second week after birth is unknown. It has, however, been established that coincident with this destructive lesion of the cortex there is an increase in heat production,[78] and it is possible that it may have the same physiologic significance as the increased heat production in rabbits, cats, rats and mice following experimental injury or removal of the adrenal cortex.

Thyroid-Kidney (Diuresis).—During the last forty years, clinicians have frequently reported improved water elimination in certain forms of nephritis by the administration of desiccated thyroid and more recently of thyroxine, alone or combined with parathyroid extract. This form of therapy has been used particularly in the so-called lipoid nephrosis. No explanation for the effects noted has been forthcoming beyond the possibility that these drugs increased the mobilization and excretion of calcium.

The recent revival of work on the pituitary gland has brought out other facts, which also suggest that the thyroid is involved in water excretion through the kidney. Transient polyuria was almost constantly obtained by the earlier workers using the transdural method of approaching the hypophysis. It was found that sectioning of the stalk alone, trauma of the adjacent hypothalamus and particularly injuries in the region of the supra-opticus nuclei led to polyuria.

Teel [79] first noted polyuria in dogs given daily injections of an alkaline extract of fresh anterior pituitary. Polyuria and glycosuria lasting a week or two has been obtained by many workers in dogs, rabbits and rats injected with salt solution emulsions or with alkaline and acid extracts of the anterior pituitary.

Barnes, Regan and Bueno [80] noted polyuria in dogs following the injection of extracts of anterior pituitary, beginning usually on the second day and returning to normal in ten days. In thyroidectomized dogs this polyuria did not occur. Biasotti [81] confirmed both these observations and added that castration or section of the splanchnics did not affect the polyuria. He also confirmed the increased urinary output in normal dogs following the administration of very large doses of desiccated thyroid. During the past four years, Rosen and I [82] have studied several instances of polyuria in rabbits which developed in connection with our experiments on goiter produced by cyanide and alfalfa hay. All the instances observed were in young male adults with large goiters, and the polyuria began within two days after starting small doses of potassium iodide (1.25 mg., three times weekly). All goitrous rabbits thus treated, as first shown by Webster and Chesney,[83] develop an intense hyperthyroidism (sometimes fatal) with great loss of weight. In one instance in which potassium iodide was given, the polyuria persisted for three months, at which time a thyroidectomy was performed. The polyuria (as high as 800 cc. daily) gradually receded to a daily average of 50 cc. during the next ten days and remained down for several weeks, although the rabbit was receiving potassium iodide (1.25 mg., three times weekly). Desiccated thyroid was started in doses of 0.1 Gm., three times weekly, and the polyuria recurred on the second day of the treatment. In none of these cases has the polyuria been associated with glycosuria as is the case when anterior pituitary extracts are used. Desiccated thyroid or iodine in twice these amounts has not appreciably increased the urine output in my nongoitrous, thyroid intact rabbits. Normal rabbits subjected to thyroidectomy are more sensitive to thyroid feeding than rabbits with intact thyroids, but this increased sensitivity is slight in comparison to that of rabbits that had goiter prior to thyroidectomy.

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Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTIONS WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

BETA-LACTOSE. — $C_{12}H_{22}O_{11}$. — A disaccharide obtained by allowing a solution of lactose to crystallize above 93 C.

Actions and Uses.—Like its more common isomer, lactose-U. S. P., beta-lactose is used as a diluent and as a food, particularly in modified milk for infants; also as a supplementary food for adults. However, it possesses greater solubility and a higher degree of sweetness than lactose-U. S. P. Beta-lactose provides a favorable medium for the growth of the *B. acidophilus.*

Dosage.—The same as for lactose-U. S. P.

Manufactured by the National Milk Sugar Co., Inc., New York. U. S. patent 1,956,811 (May 1, 1934; expires 1951).

Beta-lactose occurs as small, odorless, white, rhombic crystals. It is freely soluble in either hot or cold water but alpha-lactose is liable to separate when strong solutions are allowed to stand. It is almost insoluble in alcohol and definitely insoluble in ether and chloroform.

The specific rotation $[\alpha]\frac{25}{D}$ of a 10 per cent solution at 25 C. measured not more than three minutes after the water is first added to the substance, ranges between +35 and +38. After standing twenty-four hours, the specific rotation $[\alpha]\frac{25}{D}$ ranges between 52.5 and 55.5.

Add an equal volume of sodium hydroxide solution to a hot 20 per cent solution of beta-lactose and warm the mixture: the liquid turns yellow and finally brownish red; on subsequent addition of a few drops of cupric sulphate solution, a precipitate of cuprous oxide occurs. Add to 5 Gm. of beta-lactose sufficient water to make 25 cc. of solution: the solid dissolves in less than five minutes.

Dissolve 3 Gm. of beta-lactose in 10 cc. of boiling distilled water; the solution is clear, colorless, odorless and neutral to litmus paper.

Transfer 1 Gm. of beta-lactose to an Erlenmeyer flask and boil for ten minutes with 15 cc. of alcohol under a reflux condenser, allow to stand five hours or longer at room temperature, filter, evaporate 10 cc. of the filtrate to dryness on the steam bath: the residue weighs not more than 0.007 Gm. *(sucrose, dextrose).*

A 5 per cent aqueous solution of beta lactose meets the U. S. P. X requirements for *heavy metals* (U. S. P. X, p. 439).

Dissolve 1 Gm. of beta-lactose in 50 cc. of distilled water, boil for one minute, cool, add a drop of iodine solution; the solution is not colored red, green or blue *(starch, dextrin).*

Transfer about 2 Gm. of beta-lactose, accurately weighed in a wide mouth weighing bottle, to a desiccator containing a 60 per cent solution of calcium nitrate; when constant weight is attained transfer to an oven at 70 C., until constant weight is again attained, finally transfer to a vacuum oven at 100 C., and a pressure of 2 cm. of mercury until constant weight is attained. The loss obtained by use of the vacuum oven is not more than 0.18 per cent.

NOVOCAIN (See New and Nonofficial Remedies, 1935, p. 63).

The following dosage forms have been accepted:

Ampules Sterile Crystals Novocain for Spinal Anesthesia, 50 mg.
Ampules Sterile Crystals Novocain for Spinal Anesthesia, 100 mg.
Ampules Sterile Crystals Novocain for Spinal Anesthesia, 120 mg.
Ampules Sterile Crystals Novocain for Spinal Anesthesia, 150 mg.
Ampules Sterile Crystals Novocain for Spinal Anesthesia, 200 mg.

Ampules Sterile Solution Novocain 20 per cent, 1.5 cc.: This solution must be diluted before it is used.

Ampules Sterile Solution Novocain 20 per cent, 5 cc.: This solution must be diluted before it is used.

Ampules Sterile Solution Novocain 20 per cent with l-Suprarenin Synthetic Bitartrate 1:9,000, 1.5 cc.: Novocain 0.3 Gm. and *l*-suprarenin synthetic bitartrate 0.165 mg., in distilled water to make 1.5 cc. This solution must be diluted before it is used.

Ampules Sterile Solution Novocain 20 per cent with l-Suprarenin Synthetic Bitartrate 1:9,000, 5 cc.: Novocaine 1 Gm. and *l*-suprarenin synthetic bitartrate, 0.55 mg., in distilled water to make 5 cc. This solution must be diluted before it is used.

Ampules Novocain Solution 1 per cent, 2 cc.: Novocain 0.02 Gm., sodium chloride 0.012 Gm., in distilled water to make 2 cc.

Ampules Novocain Solution 1 per cent with l-Suprarenin Synthetic Bitartrate 1:50,000, 2 cc.: Novocain 0.02 Gm., *l*-suprarenin synthetic bitartrate 0.04 mg., sodium chloride 0.009 Gm., potassium sulphate 0.008 Gm., in distilled water to make 2 cc.

Ampules Novocain Solution 1 per cent with l-Suprarenin Synthetic Bitartrate 1:50,000, 6 cc.: Novocain 0.06 Gm., *l*-suprarenin synthetic bitartrate 0.12 mg., sodium chloride 0.027 Gm., potassium sulphate 0.024 Gm. in distilled water to make 6 cc.

Ampules Novocain Solution 2 per cent with l-Suprarenin Synthetic Bitartrate 1:50,000, 1 cc.: Novocain 0.02 Gm., *l*-suprarenin synthetic bitartrate 0.02 mg., in distilled water to make 1 cc.

Ampules Novocain Solution 2 per cent with l-Suprarenin Synthetic Bitartrate 1:20,000, 1 cc.: Novocain 0.02 Gm., *l*-suprarenin synthetic bitartrate 0.05 mg., in distilled water to make 1 cc.

Ampules Novocain Solution 2 per cent with l-Suprarenin Synthetic Bitartrate 1:50,000, 3 cc.: Novocain 0.06 Gm., *l*-suprarenin synthetic bitartrate 0.06 mg., sodium chloride 0.0135 Gm., potassium sulphate 0.012 Gm., in distilled water to make 3 cc.

Ampules Novocain Solution 2 per cent with l-Suprarenin Synthetic Bitartrate 1:20,000, 3 cc.: Novocain 0.06 Gm., *l*-suprarenin synthetic bitartrate 0.15 mg., sodium chloride 0.0135 Gm., potassium sulphate 0.012 Gm., in distilled water to make 3 cc.

Ampules Novocain Solution 2 per cent with l-Suprarenin Synthetic Bitartrate 1:20,000, 6 cc.: Novocain 0.12 Gm., *l*-suprarenin synthetic bitartrate 0.3 mg., in distilled water to make 6 cc.

Ampules Ephedrine-Novocain Solution, 1 cc.: Novocain 1 per cent and ephedrine hydrochloride-N. N. R. 5 per cent.

Ampules Ephedrine-Novocain Solution, 2 cc.: Novocain 1 per cent and ephedrine hydrochloride-N. N. R. 5 per cent.

Tablets Novocain, 1 grain.

Novocain (0.08 Gm.) and l-Suprarenin Synthetic Bitartrate (0.06 mg.) Hypodermic Tablets: Novocain 0.08 Gm. and *l*-suprarenin synthetic bitartrate 0.06 mg.

Tablets Novocain 0.01 Gm. with l-Suprarenin Synthetic Bitartrate 0.2 mg.

EPHEDRINE HEMIHYDRATE (See THE JOURNAL, May 11, 1935, p. 1707).

Ephedrine Alkaloid-Merck.—A brand of ephedrine hemihydrate-N. N. R.

Manufactured by Merck & Co., Inc., Rahway, N. J. No U. S. patent or trademark.

EPHEDRINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1935, p. 201).

Ephedrine Hydrochloride-Merck.—A brand of ephedrine hydrochloride-N. N. R.

Manufactured by Merck & Co., Inc., Rahway, N. J. No U. S. patent or trademark.

EPHEDRINE SULPHATE (See New and Nonofficial Remedies, 1935, p. 202).

Ephedrine Sulphate-Merck.—A brand of ephedrine sulphate-N. N. R.

Manufactured by Merck & Co., Inc., Rahway, N. J. No U. S. patent or trademark.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

PAUL NICHOLAS LEECH, Secretary.

SCOTT'S EMULSION OF COD LIVER OIL OMITTED FROM N. N. R. AND SCOTT'S COD LIVER OIL CONCENTRATE TABLETS UNACCEPTABLE FOR N. N. R.

Scott's Emulsion of Cod Liver Oil (formerly marketed under the noninformative name "Scott's Emulsion") was accepted in 1932 for inclusion in New and Nonofficial Remedies as a dosage form of Scott's Norwegian Cod Liver Oil (Plain). As a condition of acceptance, Scott & Bowne adopted the more informative name, eliminated the therapeutically worthless calcium and sodium hypophosphites from the formula, and eliminated therapeutic claims for these constituents from the advertising. As accepted by the Council, the statement of composition was:

Scott's emulsion of cod liver oil is prepared from Scott's Norwegian cod-liver oil (plain) 27.9 per cent (30 per cent by volume); glycerin 12.5 per cent, acacia 1.56 per cent, tragacanth 1.46 per cent, flavoring 0.15 per cent, agar 0.03 per cent, and water to make 100 per cent.

In 1933 the firm informed the Council that complaints were being received that the product as prepared under the new formula was not satisfactory, the absence of the hypophosphites causing the emulsion to be less stable. The firm was granted permission to replace the hypophosphites as a pharmaceutic measure on condition that no therapeutic claims were made on the basis of their presence. The firm agreed to this and the formula was changed to:

Cod Liver Oil	27.90%	by weight
Glycerine	12.50%	
Gum Arabic	1.56%	
Gum Tragacanth	1.46%	
Essential Oils (flavoring)	.16%	
Calcium Hypophosphite	.78%	
Sodium Hypophosphite	.39%	
Agar Agar	.07%	
Distilled Water	55.18%	
	100.00%	

Meanwhile Scott & Bowne had presented its Cod Liver Oil Concentrate Tablets for the Council's consideration. This product was found acceptable provided certain changes were made in the trade packages and provided evidence should be presented to support the claim that the tablets are "protected against deterioration."

Recently the firm informed the Council that the Department of Agriculture had ruled the name "Scott's Emulsion of Cod Liver Oil" not permissible, since the product has not the composition of the official emulsion of cod liver oil. Thus being under the necessity of changing either the name or the composition of the product, the firm informed the Council that it felt obliged to return to the old name, "Scott's Emulsion," retaining the present composition. The firm informed the Council that the department had stated that the name "Scott's Emulsion" would not infringe on any of its regulations. The uninformative name is, of course, contrary to the Council's rule. The firm, however, would make no other change, although it was informed of a communication to the Council from a representative of the department to the effect that a name such as "Scott's Emulsion of 30% Cod Liver Oil" would be equally acceptable.

The firm informed the Council that its Cod Liver Oil Concentrate Tablets were to be advertised in connection with the emulsion and has taken no steps to make the product otherwise acceptable.

The Council was therefore obliged to omit Scott's Emulsion of Cod Liver Oil (now "Scott's Emulsion") from New and Nonofficial Remedies and to declare Scott's Cod Liver Oil Concentrate Tablets unacceptable for New and Nonofficial Remedies.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

1. HOVDEN'S STEAM GRILLED SARDINES IN OLIVE OIL AND TOMATO SAUCE
2. HOVDEN'S CALIFORNIA SARDINES BONELESS PEELED PACKED IN OLIVE OIL
3. HOVDEN'S CALIFORNIA SARDINES FRENCH STYLE PACKED IN OLIVE OIL
4. HOVDEN'S CALIFORNIA SARDINES GARNISHED PACKED IN OLIVE OIL
5. HOVDEN'S CALIFORNIA SARDINES FILETS SMOKED BONELESS PACKED IN OLIVE OIL
6. PREFET BONELESS PEELED SARDINES IN OLIVE OIL
7. PREFET FRENCH STYLE SARDINES PACKED IN OLIVE OIL
8. PREFET GARNISHED SARDINES IN OLIVE OIL
9. PREFET FANCY FILET OF SARDINES SMOKED BONELESS IN OLIVE OIL
10. PREFET CALIFORNIA SARDINES PACKED IN OLIVE OIL AND TOMATO SAUCE
11. PREFET CALIFORNIA SARDINES PACKED IN OLIVE OIL AND MUSTARD SAUCE

Packer.—K. Hovden Company, Monterey, Calif.

Distributor of Prefet Brands.—Pacific Packers Association, Monterey, Calif. (subsidiary of K. Hovden Company).

Description.—(1) and (10) Canned steam grilled sardines (Clupea caeruleus, blue sardines) with tomato sauce, salt and olive oil; the same as Portola Sardines (Pilchards) Steam Grilled—In Tomato Sauce and Olive Oil (THE JOURNAL, June 4, 1932, p. 1991).

(2) and (6) Cooked, peeled and boneless Pilchard sardines packed in olive oil in tins; the same as Boneless Peeled Portola Sardines (In Olive Oil) (THE JOURNAL, June 18, 1932, p. 2211).

(3) and (7) Cooked immature sardines packed in olive oil; the same as Portola French Style Sardines (In Olive Oil) (THE JOURNAL, July 9, 1932, p. 135).

(4) and (8) Cooked immature sardines packed in olive oil with slices of pickle, carrot and pimiento, in tins; the same as Portola Garnished Sardines (In Olive Oil) (THE JOURNAL, July 16, 1932, p. 225).

(5) and (9) Cooked, boneless smoked Pilchard sardines packed in olive oil in tins; the same as Portola Filet of Sardines (In Olive Oil) (THE JOURNAL, July 2, 1932, p. 35)

(11) Same as (1) except that mustard sauce replaces tomato sauce.

PURINA WHOLE WHEAT BREAD

Distributor.—National Tea Company, Chicago.

Description.—A whole wheat bread made by the straight dough method (method described in THE JOURNAL, March 12, 1932, p. 889); prepared from whole wheat flour, water, vegetable shortening, honey, corn sugar, yeast, salt and malt extract.

Analysis (submitted by distributor).—

	per cent
Moisture	36.3
Ash	2.0
Fat (ether extraction method)	6.1
Protein (N × 6.25)	9.9
Crude fiber	1.5
Carbohydrates other than crude fiber (by difference)	44.2

Calories.—2.7 per gram; 77 per ounce.

Claims of Distributor.—Conforms to the United States Department of Agriculture definition and standard for whole wheat bread.

CELLU YELLOW CLING PEACHES PACKED IN WATER WITHOUT ADDED SUGAR OR SALT

Distributor.—The Chicago Dietetic Supply House, Inc., Chicago.

Packer.—Hunt Brothers Packing Company, San Francisco.

Description.—Canned cooked pitted yellow cling peach halves, packed in water without added sugar or salt.

Manufacture.—The method of manufacture is essentially the same as for Cellu Juice-Pak Cling Peaches (THE JOURNAL, Aug. 25, 1934, page 564), with the exception that the fruit is packed in water.

Analysis (submitted by distributor).—

	per cent
Moisture	92.9
Total solids	7.1
Ash	0.3
Fat (ether extract)	0.1
Protein (N × 6.25)	0.2
Reducing sugars as invert sugar	2.5
Sucrose	2.5
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	6.3

Calories.—0.3 per gram; 9 per ounce.

Claims of Distributor.—For diets in which sweetened fruit is proscribed.

CUBE FLAVORED JELL-WELL GELATINE DESSERT

CONCORD GRAPE FLAVOR

Manufacturer.—Jell-Well Dessert Company, Los Angeles.

Description.—Gelatin dessert mixture: sucrose, gelatin, tartaric acid, salt, cream of tartar, U. S. Department of Agriculture certified color and Concord grape concentrate. The flavor is sealed in cubes of sugar.

Manufacture.—Sugar, gelatin, tartaric acid, cream of tartar and salt are mixed and automatically weighed into packages along with two cubes prepared by mixing sugar and grape concentrate. The cubes are coated with crystallized sugar to prevent loss of volatile flavor.

Analysis.—See Jell-Well Gelatine Desserts (THE JOURNAL, Dec. 31, 1932, p. 2266).

Calories.—3.8 per gram; 108 per ounce.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 22, 1935

THE 1935 ANNUAL SESSION

The annual session of the American Medical Association held in Atlantic City last week shattered all records for medical meetings held anywhere in the world. The registration, numbering 8,469, included more physicians than have ever before been assembled for a convention at one time. The exhibits, both technical and scientific, were larger and covered a greater variety of medical topics than have ever previously been shown in any exhibits of similar character. The House of Delegates functioned with extraordinary dispatch and revealed even to the uninformed observer the unanimity of the medical profession in its point of view regarding social tendencies affecting medical practice. Unquestionably the Atlantic City session will go down in history as one of the most successful ever held and will mark a new peak at which future sessions may aim.

The meeting began on Monday, June 10, in the midst of a downpour, which it is understood marked a record in precipitation of water for the New Jersey coast. Yet this flood was no deterrent to the attendance, since the number of physicians registering on the first day was the greatest ever recorded for the first day of any medical meeting. No doubt the downpour served a useful purpose in causing the vast majority of those who registered to spend their full time in the great Atlantic City auditorium, which again, in the vast expanse of its floor space and meeting places, overwhelms that of other auditoriums in the country.

On Monday noon the official bodies of the Canadian Medical Association tendered a luncheon to the Board of Trustees and officers of the American Medical Association, at which a gavel was presented to the American organization. This gavel, of unique appearance and history, will be described in forthcoming accounts of the annual session. The golf tournament scheduled for Monday was necessarily postponed until Tuesday.

On Monday afternoon and throughout Tuesday the general scientific meetings attracted thousands of physicians, who received during this time a postgraduate education in many special subjects given by lecturers who had been especially selected by the Council on Scientific Assembly for this purpose.

On Monday night the New Jersey medical profession tendered a dinner and entertainment to the House of Delegates and officers of the Association. At this dinner, Senator James Hamilton Lewis, who had come to Atlantic City to confer with officers of the Association, spoke inspiringly for world peace and emphasized the great importance of the medical profession in molding public opinion. Indeed, he said to the profession that its members might well determine the policy of the nation on any subject to which they gave their earnest thought and effort.

The opening general meeting on Tuesday night included an attendance of more than seven thousand, and it is estimated by Atlantic City physicians that from two to three thousand additional persons were unable to gain admission to the hall. At this extraordinary meeting, an address was spoken by former senator and ambassador Walter Edge; welcoming addresses were made by the mayor of the city and representatives of the New Jersey profession, and the presidential addresses were delivered by Drs. Meakins and McLester. The last mentioned addresses likewise appear in this issue of THE JOURNAL. The mayor of Atlantic City tendered a gold emblem to the Association as a permanent token of invitation. The music for this occasion was provided by the Westminster Chorus of Princeton, N. J., and although the meeting lasted well beyond 11 o'clock the audience insisted on numerous encores, so that midnight approached before the meeting adjourned.

On Wednesday, Thursday and Friday vast numbers of physicians continued to pour into Atlantic City, coming by motor car, by rail, by airplane and by every other method of transportation to accumulate the attendance to which reference has already been made. An analysis of this attendance will be published presently in connection with the report of the meetings of the House of Delegates.

The elections in the House of Delegates were spirited and indicated that the delegates had given most serious consideration to the issues involved in determining their choice. On Thursday night the President's reception, tendered to the presidents of the American and Canadian medical associations, attracted a vast multitude of physicians and congested all the available space for dancing and entertainment in the headquarters hotel.

The press of the United States sent representatives especially for this session, so that the publicity reached throughout the world. Moreover, radio broadcasting systems made available the time for lectures as well as for news reports from this session.

An unusual feature was the attendance as a guest of Dr. Allan Roy Dafoe; he was most courteous in visiting various meetings and created a veritable sensation

by his appearance at the annual luncheon of the Woman's Auxiliary. The Woman's Auxiliary likewise had one of the most successful assemblages in its history. Atlantic City offers unusual opportunities for entertainment and for vacation. For this reason, great numbers of those visiting the annual session brought their wives and children. No doubt many a young boy and girl received at this annual session impressions that will lead to a choice of medicine as a profession in the coming years.

The annual session of 1935 closed on a note of quite general satisfaction. It served to bring together more closely the medical professions of two great neighboring nations. It helped to inform the medical profession and the public generally that the physicians of the United States still feel that they themelves must determine the nature and the methods of medical practice. It emphasized again the earnest desire of the medical profession to provide adequate medical care for all the people. It is hoped that physicians throughout the nation who were unable to participate in this great gathering will read most carefully the detailed reports which appear in this and future issues of THE JOURNAL.

The physicians of New Jersey and especially of Atlantic City were assiduous in their attention, courteous in all their contacts, and gracious and hospitable to all their guests. The thanks and appreciation of the American Medical Association are tendered to all those who gave of their utmost to contribute to the great success of this occasion.

THE BIOLOGIC IMPORTANCE OF PRESSURE

One of the fundamental requirements of all living organisms is the ability of constant adaptation to physical changes in the environment. Alterations in environmental temperature and humidity are most commonly considered in this connection; the compensatory mechanisms for variations in these factors have been extensively investigated. There are other environmental factors, however, that may exert a profound influence. Of these, one of the most interesting but apparently least studied is the effect of pressure.

Adaptation to variations in pressure presents a real problem to many different forms of life. Fish, for example, are exposed to a pressure of two atmospheres at a depth of only 34 feet below the surface of the water. The pressure at a depth of 2 miles, at which various species of fish have been captured, is approximately 300 atmospheres, or 4,600 pounds per square inch. Apparently, one of the chief compensatory adjustments required is an alteration in specific gravity, so that the fish may swim about without the expenditure of too great an amount of energy. This is accomplished by variations in the volume of the swim bladder, mere expansion or contraction serving to compensate for minor changes in pressure, whereas active absorption or secretion of gases is probably called into play where depth changes of a greater magnitude occur. Under certain conditions man may be exposed to significant alterations in pressure. Aviators and mountain climbers may encounter marked decreases, the pressure at an elevation of 18,000 feet being only one-half that at sea level. Small decreases in pressure occurring in changes in altitude of a few hundred feet produce well known sensations in the ears; greater decreases may cause "mountain sickness," a condition resulting from the lowering of oxygen tension. The compensatory response of the organism against the latter is splenic contraction, with the forcing into the blood stream of more erythrocytes to aid in oxygen transport to the tissues; subsequently, new erythrocytes are released into the circulation in increased numbers by the bone marrow. Increases in environmental pressure, encountered by deep sea divers and caisson workers, are apparently well tolerated. The danger comes with the return of the subject to atmospheric pressure. It is necessary to exercise great caution in order to avoid too abrupt a decrease in pressure, which might cause the sudden release of nitrogen gas from solution into the tissues, where it causes serious symptoms known as the "bends" or caisson disease.

A number of experimental studies have been conducted to determine the effects of alterations of environmental pressure on laboratory animals or on isolated tissues. Recently [1] the behavior of muscle and nerve tissue at increased pressures has been observed. An ingenious chamber was devised, which permitted observations on the tissue while exposed to pressures as great as 15,000 pounds per square inch (approximately 100 atmospheres). Observations on cardiac muscle showed that an increase in pressure to approximately 100 times normal produced a marked increase in the degree of shortening of the muscle following stimulation. Further increases up to 6,000 pounds per square inch produced similar stepwise increases in the force exerted by the contracting muscle up to four times the control value. This effect was completely reversible, as the response returned to its original character as soon as the pressure was released. Simultaneous measurements of heat production and the actual work done during the contraction showed that a parallel increase in the two occurred, thus demonstrating that an increase in pressure did not augment the efficiency of the mechanism whereby chemical energy is converted into mechanical work. Similar pressure effects were observed with skeletal muscle; however, the magnitude of the heightened degree of contraction with increases in pressure was less. At higher pressures the augmenting effect of increased pressure disappeared; indeed, the response of skeletal muscle became even less than at atmospheric pressure. This observation is not surprising in view

1. Cattell, McKeen: The Biological Importance of Pressure, Scient. Monthly **40**: 468 (May) 1935.

of the alleged effect of extremely high pressures on proteins. The statement has been made that pressures of 88,000 pounds per square inch coagulate muscle protein or egg white irreversibly at room temperature.

The effects of increased pressure on nerves paralleled in general those obtained on muscle. Moderate pressures exerted a stimulatory effect, lowering the threshold of excitation and increasing the velocity of propagation. High pressures produced the opposite effect. Entirely different results were obtained, however, when even small pressures were applied locally to the nerve. A rapid loss of function ensued. The common experience of having a limb "go to sleep" following the prolonged application of a small local pressure may be explained on the basis of the foregoing experiment.

IODINE AND ATHEROSCLEROSIS

The production of atherosclerosis in rabbits by the administration of considerable quantities of cholesterol has been recognized [1] since 1908 and has received wide attention from investigators studying this pathologic thickening of the intima of the aorta. Some workers, especially Anitschkow, have supported the view that atherosclerosis produced by cholesterol in rabbits represents the counterpart of arteriosclerosis in man.[1] Notwithstanding the lack of general acceptance of this idea, interesting chemical and morphologic data have been accumulated from experimental studies of this cholesterol-induced atherosclerosis. Of the results that have been obtained, one of the most interesting is the demonstration that administration of thyroid substances or of iodides prevents the deposition of cholesterol in the arteries, when this sterol is fed to experimental animals.[2] This observation has been substantiated in several laboratories with both organic and inorganic compounds of iodine. Subsequent investigations have been concerned with attempts to determine the manner in which this element exerts its prophylactic effect. A number of hypotheses have been put forward. Of considerable interest are the recent studies of Turner and Khayat,[3] which demonstrate that the ability of iodine to prevent atheromatous changes in rabbits ingesting cholesterol is dependent on the thyroid gland. In the absence of this organ in rabbits, iodine was entirely ineffective in exerting this regulatory rôle. It appears, therefore, that the action of the iodine is an indirect one working through the thyroid gland. The exact mode of action is not clear, but recent investigations of the chemical alterations of the blood during cholesterol and iodine administration begin to clarify some of the factors involved.

An increase in both the cholesterol and the fatty acids of the blood following the ingestion of cholesterol dissolved in oil is well established. As Schönheimer [4] has demonstrated that the lipids which are deposited in the human aorta are of a composition which suggests their infiltration from the blood and deposition without change in composition, the suggestion has been made that only a continued lipemia may cause atherosclerosis. Anitschkow has supported this idea specifically by postulating that the degree of atherosclerosis of the aorta is directly proportional to the level of the blood cholesterol. It therefore seemed logical to believe that the effectiveness of iodides was due to the prevention of lipemia. Recent investigations, however, conducted at the Hospital of the Rockefeller Institute for Medical Research,[5] have demonstrated that just the contrary occurs with respect to the blood picture. Administration of an organic iodine compound to rabbits receiving cholesterol dissolved in olive oil prevented the appearance of atherosclerosis, which otherwise followed the administration of cholesterol and olive oil. In both groups a persistent lipemia developed, which was, however, more marked in those fed organic iodine in addition to cholesterol. The average content of lipids per hundred cubic centimeters of plasma in the latter group was 2.9 Gm., as contrasted with a value of 2.2 Gm. in the animals receiving cholesterol alone. These interesting observations indicate that in iodine-fed rabbits there is no appearance of atherosclerosis despite the existence of a lipemia, which, in the absence of iodine therapy, is associated with the process leading to pathologic alterations of the blood vessels. The authors tentatively assume that the state of metabolism of the tissues, thus influencing the receptivity of these tissues to the deposition of fat, is an important factor in determining whether lipids will be deposited in the arterial walls. This type of variable would offer a partial explanation of the existence of strictly localized atherosclerotic plaques, which has led to the view that atherosclerosis is a focal and not a general morbid change.

1. Cowdry, E. V.: Arteriosclerosis: A Survey of the Problem, New York, Macmillan Company, 1933.
2. Murata, M., and Kataoka, S.: Verhandl. d. Jap. path. Gesellsch. **7**: 27, 1917.
3. Turner, K. B.: J. Exper. Med. **58**: 115 (July) 1933. Turner, K. B., and Khayat, G. B., ibid. **58**: 127 (July) 1933.
4. Schönheimer, R.: Ztschr. f. physiol. Chem. **160**: 61, 1926; **177**: 143, 1928.
5. Page, I. H., and Bernhard, W. G.: Cholesterol-Induced Atherosclerosis, Arch. Path. **19**: 530 (April) 1935.

Current Comment

NEW OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION

Each session of the American Medical Association includes the election by the House of Delegates of those who are to serve the Association in various executive, legislative and judicial capacities for the coming years. In making its choices, the House of Delegates must consider not only the individual capacities of those who are to serve but also the constituencies to be represented, the policies of the organization, and the requirements of the separate situations involved. At the Atlantic City

session the House of Delegates found it necessary to choose two new trustees, since the terms of two men who have given long and capable service to the House terminated on this occasion and since, by the Constitution and By-Laws of the Association, they could not be reelected. Dr. J. H. J. Upham, who has served with distinction as a member of the Board of Trustees since the year 1923 and recently as its chairman, was retired under this ruling and Dr. James R. Bloss of Huntington, W. Va., was elected to succeed him. The term of Dr. Joseph A. Pettit, who has served on the Board since 1925, terminated, and Dr. Ralph A. Fenton of Portland, Ore., was the choice of the House for this position. The terms of these new trustees will terminate in 1940. At the session of the Board of Trustees immediately following this election, Dr. Rock Sleyster of Wauwatosa, Wis., was selected by the Board as its chairman and Dr. Austin A. Hayden was reelected as secretary. The Executive Committee of the Board of Trustees will include Drs. Austin A. Hayden, Charles B. Wright and Arthur W. Booth. In addition to selecting Dr. James Tate Mason of Seattle as President-Elect, the House of Delegates chose Dr. Kenneth A. Lynch of Charleston, S. C., as vice president and reelected Dr. Olin West of Chicago as secretary and Dr. Herman L. Kretschmer of Chicago as treasurer. Dr. Nathan B. Van Etten of New York was selected speaker of the House of Delegates to succeed Dr. F. C. Warnshuis, and Dr. H. H. Shoulders of Nashville, Tenn., became vice speaker, succeeding Dr. Nathan B. Van Etten. The President of the Association, Dr. James S. McLester, announced the appointment of Dr. George Edward Follansbee of Cleveland to succeed himself as a member of the Judicial Council, terminating in 1940, Dr. Reginald Fitz of Boston to succeed himself on the Council on Medical Education and Hospitals until 1942, and Dr. A. A. Walker of Birmingham, Ala., on the Council on Scientific Assembly for a period of five years. By an almost unanimous choice the House of Delegates selected Kansas City as the meeting place for the eighty-seventh annual session of the Association, in 1936. The physicians of Kansas City, who attended the Atlantic City session in great numbers, were unanimous with praise for the new auditorium, which will well accommodate the next session, and promised to do their utmost to surpass the extraordinary meeting that has just been concluded.

JAMES TATE MASON, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

DR. JAMES TATE MASON PRESIDENT-ELECT

The election of Dr. James Tate Mason of Seattle to the presidency of the American Medical Association is a recognition of the great achievements of the Northwest, which has on several occasions entertained the American Medical Association at its annual sessions and which has contributed notably to American medical thought. Dr. Mason was born in Virginia, May 20, 1882. His father was Dr. Claiborne Rice Mason of Lahore, Orange County, Va. After receiving his M.D. degree from the University of Virginia Department of Medicine in 1905, James Tate Mason entered the practice of surgery first at Philadelphia and then at Franklin, Wash. He then took up his residence in Seattle, where he has practiced surgery since 1909. From 1916 to 1920 he was surgeon and superintendent of King County Hospital. Since 1920 he has been chief surgeon of the Mason Clinic and president of the Virginia Mason Hospital. He is consulting surgeon of the United States Marine Hospital at Seattle, the American Mail Line, the Alaskan Steamship Company and the Northern Pacific Railroad Company. He is a fellow of the American College of Surgeons and a member of the American Surgical Association, American Association for the Study of Goiter, the Western Surgical Association, the Southern Surgical Association, the Pacific Coast Surgical Association, the Sons of the American Revolution, and other medical societies and organizations. In many of these he has occupied positions in an executive capacity. In the American Medical Association he was a member of the House of Delegates for six years, between 1928 and 1934; he was secretary of the Section on Surgery, General and Abdominal, from 1923 to 1926, when he was elected chairman, serving in that capacity for one year. Dr. Mason has contributed notably to the literature of surgery. His election is a recognition, incidentally, not only of the great Northwest but also of the state of Virginia, from which have come many notable medical leaders.

PROCEEDINGS OF THE ATLANTIC CITY SESSION

MINUTES OF THE EIGHTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ATLANTIC CITY, JUNE 10-14, 1935

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 10

The House of Delegates convened in the Renaissance Room of the Ambassador Hotel and was called to order at 10 a. m. by the Vice Speaker, Dr. N. B. Van Etten.

Preliminary Report of the Reference Committee on Credentials

A preliminary report of the Reference Committee on Credentials was submitted by the chairman, Dr. J. D. Brook, Michigan, who reported that 114 delegates with proper credentials had registered. He recommended the seating of the following physicians, who had lost or forgotten their credentials but who had been properly vouched for and whose names appeared on the Secretary's official list: Drs. T. Henshaw Kelly, California; C. G. Abell, Vermont; John Z. Brown Sr., Utah; S. C. Harvey, Connecticut, and H. H. Trout, Virginia.

On motion of Dr. C. S. Gorsline, Michigan, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the report of the Reference Committee on Credentials was adopted.

The Vice Speaker declared that the signed attendance slips would constitute the roll of the House for the morning.

Adoption of Minutes of Cleveland Session

It was moved by Dr. A. T. McCormack, Kentucky, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, that the reading of the minutes of the Cleveland session be dispensed with, since they had been published and distributed, and that they be adopted with the correction as indicated on page 33.

Address of the Speaker, Dr. F. C. Warnshuis

The Vice Speaker, in the absence of Dr. F. C. Warnshuis because of the death of his son, read the Speaker's Address, which was referred to the Reference Committee on Reports of Officers:

Members of the House of Delegates:

In greeting you at this opening session of your annual deliberations, I am genuinely grateful for being once more privileged to serve as your presiding officer.

The Board of Trustees, councils, bureaus and special committees will present to you their annual reports and recommendations. It is the obligation of every delegate to review and study them carefully. As delegates, chosen by your fellow members to represent them, you become the spokesmen of the medical profession of this nation. In that capacity your actions and decisions create standards and policies for the information and guidance of the Association's officials and the constituent units of our federacy. A delegate's responsibility, therefore, is representative and not individualistic. In arriving at a final decision, judgment should be based on facts and conditions as they are related to and affect your constituency and not as they concern personal interests or opinions. Approaching all of the Association's problems and interests in that spirit will continue the prestige we hold and establish public confidence and endorsement.

Your Speaker earnestly recommends that the delegates of every state take the necessary action that will convey to their state organizations a detailed report of all that transpired during this session. There is great need for bringing to every member and Fellow clear and intimate knowledge of the policies and activities of the Association as revealed by the endeavors of officers, trustees, councils and bureaus. When our Fellows and members are intelligently informed, misunderstanding will disappear and our efforts will be more achieving. It is earnestly requested that you discharge this obligation.

REFERENCE COMMITTEES

In appointing Reference Committees, an earnest endeavor is made to make them representative. To constitute impartial and open-minded committees is the quest of your Speaker. Delegates are urged to attend and participate in the hearings of all Reference Committees. Committee chairmen will announce the time and place of their meetings.

Your Speaker urges anew that committee chairmen, in making recommendations on resolutions that have been introduced, give a brief résumé of the representations made before the committee by the proponents and opponents of resolutions. Such a résumé will be helpful to every delegate.

The floor of this House is open to every delegate. Before a report or resolution is acted on it will be your Speaker's endeavor to recognize any delegate who desires to address this body. Before a vote is taken your Speaker will be painstaking in order that delegates may clearly understand that which they are voting on. An impartial and fair attitude will be reflected at all times.

CANADIAN MEDICAL ASSOCIATION

The long desired joint session with our Canadian associates in medicine is being realized during this annual session. On behalf of this House of Delegates a very sincere welcome is extended to all the members of the Canadian Medical Association who are in attendance.

Scientific medicine knows no national boundaries. Medicine is a republic in which its disciples from every country in the world have worked shoulder to shoulder. Medicine's combined might has always been directed to obtain the advancement of the science of medicine. Medicine is slowly but steadily ascending to the throne of her rightful dominion and, enthroned, will launch her saving edict to the peoples of all nations.

Recognizing the universality of medicine, our greeting to our Canadian brothers is warmed in the glow of our cordial fraternal associations. We bid them thrice welcome.

IN MEMORIAM

Conforming to precedent it now becomes my duty to pay tribute to those of our number who have answered the last call during the past year.

> A King once said of a prince struck down,
> Taller he seems in death:
> And this speech holds truth for now as then,
> Tis after death we measure men.
> Our Heroic Dead—James Barrow Hope.

Since our last annual session the following Fellows' names are added to the roll of our departed associates (the dates following the names indicate the years of service in the House):

H. D. Arnold, Boston, 1908-1913.
John Montgomery Baldy, Philadelphia and Devon, Pa., 1914 (fourth vice president, 1918-1919).
B. H. Blair, Lebanon, Ohio, 1910-1911.
John A. Campbell, Williamsport, Pa., 1924-1927, 1929-1931.
William F. Drewry, Petersburg, Va., 1907.
R. U. Drinkard, Wheeling, W. Va., 1931.
Gaston H. Edwards, Orlando, Fla., 1925, 1931.
H. L. Fancher, Chattanooga, Tenn., 1926.
Edward D. Fisher, New York, 1911.
Henry N. Fitzhugh, Westminster, Md., 1933-1934.
J. W. Hamilton, Mount Vernon, Ill., 1914-1915.
Jabez North Jackson, Kansas City, Mo., 1903-1904, 1906, 1919, 1930-1931, 1933 (President-Elect, 1926-1927; President, 1927-1928).
Millard F. Jarrett, Fort Scott, Kan., 1915.
August F. Jonas, Omaha, 1906, 1911 (third vice president, 1901-1902).
William Kuykendall, Eugene, Ore., 1926-1931.
Ralph W. McDowell, U. S. Navy, 1934.

Gilman Osgood, Rockland, Mass., 1915-1916, 1918, 1920.
Wendell C. Phillips, New York, 1912-1917 (Trustee, 1917-1924; President-Elect, 1925-1926; President, 1926-1927).
Clarence Pierson, Jackson, La., 1919-1920.
Creswell T. Pigot, Roundup, Mont., 1922-1934.
Curran Pope, Louisville, Ky., 1912.
A. B. Small, Dallas, Texas, 1915-1916.
E. Otis Smith, Cincinnati, 1910-1911, 1913, 1918, 1921.
P. W. Tomlinson, Wilmington, Del., 1907-1908, 1919, 1926, 1931.
E. C. Taylor, Jackson, Mich., 1923.
Mathew N. Voldeng, Woodward, Iowa, 1912-1920, 1924.
Otho Boyd Will, Peoria, Ill., 1902, 1906.

The world has lost these master workmen. For a time we shall grieve that they are dead. For a longer time we shall rejoice that they lived.

At the request of the Vice Speaker, the members of the House rose and stood for one minute in silent tribute to the memory of departed delegates.

Messages of Condolence

Dr. A. T. McCormack, Kentucky, moved that the Vice Speaker and the Secretary send a telegram of condolence in behalf of the House to Dr. F. C. Warnshuis. The motion was seconded by Dr. J. D. Brook, Michigan, and carried by a rising vote.

Dr. Holman Taylor, Texas, moved that a telegram of appreciation and sincere good wishes for an early and complete recovery be sent to Dr. H. M. Johnson, Minnesota. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

Reference Committees

The Vice Speaker presented the following names of members of Reference Committees appointed by the Speaker:

SECTIONS AND SECTION WORK

T. B. Throckmorton, Chairman..Section on Nervous and Mental Diseases
John W. Amesse.....Colorado
G. Henry Mundt.....Illinois
Isaac A. Abt.....Section on Pediatrics
Holman Taylor.....Texas

RULES AND ORDER OF BUSINESS

C. W. Waggoner, Chairman.....Ohio
James R. Bloss.....West Virginia
Bundy Allen.....Florida
Thomas F. Thornton.....Iowa
Ralph A. Fenton.....Oregon

MEDICAL EDUCATION

Irvin Abell, Chairman.....Kentucky
Walter F. Donaldson.....Pennsylvania
George Blumer.....Connecticut
W. H. Seemann.....Louisiana
W. D. Chapman.....Illinois

LEGISLATION AND PUBLIC RELATIONS

C. E. Mongan, Chairman.....Massachusetts
E. M. Pallette.....California
S. P. Mengel.....Pennsylvania
E. G. Wood.....Tennessee
John Z. Brown Sr.....Utah

HYGIENE AND PUBLIC HEALTH

J. N. Baker, Chairman.....Alabama
W. F. Bowen.....Kansas
J. D. Hamer.....Arizona
V. E. Simpson.....Kentucky
O. S. Wightman.....New York

AMENDMENTS TO CONSTITUTION AND BY-LAWS

J. Richard Kevin, Chairman.....New York
A. R. McComas.....Missouri
Roy W. Fouts.....Nebraska
McLain Rogers.....Oklahoma
J. Newton Hunsberger.....Pennsylvania

REPORTS OF OFFICERS

A. J. Bedell, Chairman.....New York
Ben R. McClellan.....Ohio
J. W. Burns.....Texas
Charles W. Roberts.....Georgia
J. Gurney Taylor.....Wisconsin

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

H. H. Shoulders, Chairman.....Tennessee
Henry C. Macatee.....District of Columbia
E. F. Cody.....Massachusetts
Brien T. King.....Washington
Fred Moore.....Iowa

CREDENTIALS

J. D. Brook, Chairman.....Michigan
George P. Johnston.....Wyoming
J. C. Flippin.....Virginia
J. H. Cannon.....South Carolina
Deering G. Smith.....New Hampshire

MISCELLANEOUS BUSINESS

J. F. Hagerty, Chairman.....New Jersey
L. J. Kosminsky.....Arkansas
E. N. Roberts.....Idaho
D. F. Cameron.....Indiana
B. F. Bailey.....Nebraska

MEDICAL ECONOMICS

W. F. Braasch, Chairman.....Minnesota
Fred B. Clarke.....California
Guy W. Wells.....Rhode Island
C. J. Whalen.....Illinois
H. A. Luce.....Michigan

Address of President Walter L. Bierring

The Vice Speaker presented the President, Dr. Walter L. Bierring, Des Moines, Iowa, who delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

It is difficult to find the words adequate to convey to you my appreciation for the honor extended at the Milwaukee session two years ago. I can only hope that my efforts in the service of the Association may have merited in some measure this expression of your confidence.

It has been a privilege and a rare opportunity, as well as a liberal education, to learn more of the many sided activities of our great association, to meet the individual member in his or her home surroundings in some thirty-nine or forty states, and to sense the problems that concern the doctor of today in the various sections of our country.

In a trek of some 67,000 miles, many new acquaintances were formed and old friendships renewed; but it was the fine spirit of fellowship and scientific interest manifest everywhere that engendered a feeling of pride and fervent faith that all still goes well in American medicine.

I am not quite clear as to the purpose of this annual address, but I venture to assume that it may be of interest to present some of the impressions gained by these closer contacts, their meaning as I see it, and something of the problems ahead of our association.

Meeting again in this beautiful City by the Sea, I feel inclined to draw a parallel with a former session of this House of Delegates held in Atlantic City thirty-one years ago.

On that Monday of June 6, 1904, your predecessors were concerned with questions of great portent to the future practice of medicine, which in the sequence of subsequent events has had a definite bearing on the medical, economic and professional problems that concern us in this later day.

With the turn of the century a new era began to dawn in American medicine, which was largely the heritage of the remarkable discoveries of Pasteur and the practical methods devised by Koch in bacteriology with the new conception of the causation of infectious diseases; likewise in wound infection with the resulting triumphs of antiseptic and aseptic surgery through the masters Lister and Billroth, as well as those of the brilliant exponents of the art in the New World. Furthermore, the introduction of laboratory and clinical instruction, the correlation of physiologic and pathologic changes with study at the bedside, and consequent changes in therapeutic procedure, were all dominant influences necessitating a complete transformation of medical education in this country and the character of the educational institutions responsible for such training.

For a number of years, various educational forces had given the matter careful study and consideration, but it was the forceful presidential address of Dr. Frank Billings at the New Orleans session in 1903 that directed the attention of the Association to the urgent need of improving medical education in America. It was particularly emphasized that efforts to elevate the standards of medical training through concert of action among the existing medical schools, state licensing boards and other governmental bodies had not been attainable, and that the only possible way to obtain uniform standards and best influence medical education of the future was through the agency of the organized profession of the entire country. The House of Delegates at the session in 1904 here in Atlantic City met the educational challenge of the period by establishing the Council on Medical Education, and the record of its accomplishments in the succeeding years, acting solely as a voluntary agency, is reflected in the comprehensive scheme of uniform medical education operating today in seventy-six approved medical schools, all of which are now established on a university basis.

This evolution in medical training has brought in its train many changes affecting the economic and professional status

of the practicing physician, besides distinctly extending the functions and activities of the American Medical Association in many new directions.

The impact of the laboratory in diagnostic procedure, the expansion of hospital facilities, the unusual growth of specialism and the development of industrial and preventive medicine have been further factors influencing the changing order of medical practice and the cost of medical care.

The delivery of medical service under the new order has gradually engaged an army of nonmedical personnel, such as hospital administrators, laboratory technicians and social service workers, and this, with a constantly increasing nursing profession, has not only added to the burden of illness but, what was possibly more significant, had the tendency to inject influences from without the medical profession affecting the control and character of the medical service to be rendered.

It followed as a natural sequence that various philanthropic agencies and foundations assumed the obligation of determining by means of extensive surveys and statistical studies the increasing cost of medical care as compared with that of a generation ago, and likewise venturing a remedy, culminating in the proposals during the past year of the plans for compulsory health and sickness insurance to be established by federal and state legislative action.

History has again repeated itself, and the House of Delegates as the governing body of our Association has met the new challenge to the medical practitioner of today, first, by recording itself at the Cleveland session last year in favor of a definite set of principles to guide the medical profession in meeting the problems of the delivery of medical service to all income groups; secondly, by reaffirming these basic principles at the special session of the House of Delegates, February 15 and 16, and registering in strongest terms its firm opposition to all pending and proposed legislation concerned with compulsory health or sickness insurance. Finally it delegated that the service of all administrative and other officers, and particularly the Bureau of Medical Economics, be made fully available for cooperative effort with state and local constituent societies, to unify as far as possible by proper guidance and counsel all local efforts to solve existing problems with all the facilities at the command of the Association. Under direction of this House and through wise provision of the Board of Trustees, the Bureau of Medical Economics has been provided with larger space and clerical assistance to carry on properly the increasing volume of work allotted to the director and his staff.

The General Secretary with his alert and comprehensive grasp of changing developments everywhere, and the facile pen and clarion voice of the brilliant editor through the various avenues of publicity in conjunction with inspiring medical leaders throughout the land, have endeavored to sense the thought and existing emergencies in different communities and then to furnish that information and counsel adaptable for the occasion.

It has meant a reeducation of our membership as well as of the public regarding the dangers and disappointments attending the operation of systems of compulsory health insurance in the older countries, more accurate information of existing medical economic conditions in the United States, and definite basic principles that must govern the solution of our particular problems.

By making this information available as widely as possible, the various ventures proposed by a new school of economic philosophy have been for the time being averted and, perhaps more important, a sounder and more logical thought on the subject has been developed, evidenced particularly by the greater harmony of discussions on medical economic problems at medical society gatherings, as compared with those of but a short time ago.

Thoughtful men and women are becoming convinced that private practice will continue to promise the best service for all concerned and insure its high quality. Perhaps the greatest accomplishment of this campaign of education has been the effect on legislation favoring compulsory health insurance and the government control of the practice of medicine.

In certain social and economic security measures introduced in Congress, all reference to health or sickness insurance was eliminated, and bills proposing plans for compulsory health insurance presented in one or two state legislatures were unsuccessful and did not even come up for passage. We must also by no means underestimate the significance of the fact that national legislation favoring compulsory health insurance was not only prevented but not even incorporated in any measure presented to Congress.

Probably but few outside the states concerned realized the menace of the initiative and referendum measures placed before the people of Oregon, California and Arizona at the elections last fall. A vote of approval would have meant a constitutional amendment becoming a law without executive signature and extending to the various limited practitioners all the rights and privileges of the practice of medicine and surgery and equal rights with physicians in institutions supported by public funds. The defeat of these measures was a distinct accomplishment and was largely due to the valiant efforts of the organized profession in each state to awaken the public conscience to the dangers to public health and the interest of humanity. This was greatly aided by the personal visits and counsel of Dr. Woodward, the director of the Bureau of Legal Medicine and Legislation. Now that certain dangers to the further advancement of scientific medicine are not so much in the foreground as they were a year ago, it is well again to take measure of our opportunities and responsibilities as an organized medical profession to meet the demands of a changing order in modern society.

Change has ever been a criterion of progress, and it becomes our obligation to adapt the high purpose of medicine to the needs of the period in which we live.

One of the gratifying impressions gained in contacts with the membership of our association in all parts of the country has been the sustained interest and manifest devotion to scientific medicine.

In spite of trying economic conditions, the eagerness, the hunger for new knowledge is indicated by the increasing number of physicians attending medical society meetings, clinical conferences and refresher courses, often requiring considerable sacrifice of time and distance of travel.

The American Medical Association exercises one of its particular educational functions by making available for the general practitioner as well as the specialist through its various publications every phase of medical progress, so essential for the continuous development of the experienced physician.

The Association recognizes that modern society is showing an increasing interest in matters medical, and through the medium of the efficient Bureau of Health and Public Instruction it maintains an equally important function of educating the public on the importance of well being, the prevention of disease, the principles governing the care of the sick and the achievements of modern scientific medicine. This has tended to fix in the public mind the essential qualifications for the delivery of adequate medical care as well as the ideals and high purposes of the modern physician.

The ethical conduct of the physician in all relations to colleague and patient has always been governed by precept and example, and to keep the professional shield untarnished is one of our sacred obligations to our guild and to society. A slip here and there may give cause for criticism from a not too indulgent public and easily reflect on the medical profession as a whole.

Change in methods of medical education has always gone hand in hand with the changing order of the practice of the art. The Association through the work of the Council on Medical Education and Hospitals can point with pride to being the motive force in advancing medical education in this country to its present high plane.

Various studies and surveys within recent years indicate that the needs and demands for medical service are not entirely fulfilled by the prevailing scheme of medical training. The increasing number of medical graduates each year beyond the ability of society to reward adequately is attended by definite social dangers.

The House of Delegates at the last annual session authorized a resurvey of existing medical schools under the supervision of the Council on Medical Education and Hospitals, with special reference to faculty personnel and to facilities for clinical teaching, with due regard to the number of students admitted in order to determine whether the institution concerned is able to

meet the educational demands of this period and the future practice of medicine. This action is most timely, but it is a difficult task and is being most conscientiously carried out though entailing more responsibility even than the inspections and classifications of medical schools made twenty and twenty-five years ago.

This entire movement merits your generous support and encouragement. It was a wise provision to delegate to the Council on Medical Education and Hospitals the supervision of the qualification of the different medical specialties, which ensures the highest quality of specialized practice for the future.

The efficiency of organization and close integration of the different services available have made it possible for the Association to maintain a comprehensive grasp of problems and change in medical practice existing in all sections of the country.

It seems particularly fortunate that the Bureau of Medical Economics has been established under such able direction with the ample facilities to meet particularly the emergency demands of the past year. When the report of the director is submitted, it will be recognized that no such comprehensive and complete study and analysis of the many existing plans for the delivery of medical service has been attempted by any other organization. The report is further distinctive in that it does not indicate that certain plans must be carried out but rather how they can best be developed for all concerned, which in itself is a real contribution.

It is proper to indicate certain inherent dangers connected with two movements in the interest of the public welfare incident to the present emergency period. The administration of federal emergency medical relief is closely integrated with governmental supervision. The organized medical profession is sympathetic with the humanitarian purpose of this movement but cannot entertain the same feeling toward the extension of the administrative features beyond the present emergency period.

There is probably no wider appreciation of the magnitude and comprehensive nature of the public health program contemplated in the social security act, soon to be enacted into law. Fully recognizing the need for the extension and strengthening of public health services in rural and other areas which are without adequate services of this kind, one must yet realize that the large sums of money to be allotted to each state annually are far beyond any previous state budgets for public health purposes and that no definite plans have been developed for their proper expenditure.

While the responsibility for carrying out this extensive program is properly placed with the health officer of each state, it becomes the duty of the organized medical profession to assume its share in determining between preventive and curative medicine and to see that the interests of the public health and the medical profession will be equally protected.

If the medical profession is to maintain its nobility of purpose and obligation to society it can only be by the quality of its service and the qualifications of those rendering this service. Therein lies the great opportunity of our association—by unity of effort in conjunction with constituent state and component county medical societies to keep in the pathway of progress and meet the challenge of a changing world.

As a parting word I beg to express my tribute of homage and honor to all of you for your faithful and continuous labors in the House of Delegates for the good of the Association and the glory of American medicine.

Address of President-Elect James S. McLester

The Vice Speaker presented the President-Elect, Dr. James S. McLester, Birmingham, Ala., who presented the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

My message today can appropriately be one of congratulation. When you, the members of the House of Delegates of the American Medical Association, reaffirmed a few months ago your insistence on the complete professional independence of the American physician, you presented, in a world of unrest and uncertainty, an inspiring example of clearness of vision and stability of purpose. In opposing all outside control of medical practice, governmental or otherwise, you took an important step toward the maintenance of the present high standards of American medicine. Your action was not only in the interest of the medical profession but also for the good of the American people.

There are additional reasons for congratulation. The efficiency with which this great organization works and its continued progress toward the attainment of its ideals are things which you and I can contemplate with pride. Of great influence in this regard are the officers who labor at its headquarters. I know of no general manager in any corporation who is more responsive to the wishes of his directors than is the Secretary and General Manager in reflecting the views of the House of Delegates. The earnestness and efficiency of his efforts and the wisdom displayed in his management of its affairs contribute enormously to the success of the American Medical Association. I should like to say a word, too, in praise of the high plane on which your brilliant editor conducts the publications entrusted to his care. THE JOURNAL beyond comparison is the best periodical of its scope published in any language. Its literary merit is highly pleasing to those who have a conscience for good English, while the soundness of its well written editorials and the scientific acumen used in the choice of contributions give it a degree of excellence that is unequaled among medical publications. *Hygeia* likewise fills a genuine need and does this in a most acceptable manner. The House appropriates large sums of money for the activities of the Association. I hope you realize that it is due in large part to the business acumen and untiring efforts of your business manager that you have this money to appropriate. Any organization is fortunate in having such an officer.

You are thoroughly familiar with the scientific activities of the American Medical Association, but I wonder whether even you realize the far-reaching importance of the work done by its several councils and bureaus. I would remind you of the great value at this time of the Bureau of Legal Medicine and Legislation and of the Bureau of Medical Economics and of Health and Public Instruction. In an unobtrusive but highly efficient way the executive officers of these bureaus serve as liaison officers between your headquarters in Chicago and the government in Washington. Few members of the profession realize the intentness with which the American Medical Association watches every movement that would tend to jeopardize medical standards, and the jealousy with which, acting through these bureaus, the Association guards the economic welfare and the professional interests of the American physician. The Council on Pharmacy and Chemistry and that on Physical Therapy have given the American physician a saner, better balanced view of therapeutics than is possessed by any other physician in the world. These councils have provided him with dependable facts, singularly free of the bias that in other countries usually surrounds the introduction of newer therapeutic measures. Of like influence is the Committee on Foods. The American people is acutely health conscious and will eat anything that it is told is for its good. The astute advertiser knows this and often takes advantage of it, but the Committee on Foods has given to the public in its seal of approval a sign by which foods that are correctly labeled and truthfully advertized can easily be recognized. The influence of this committee is far reaching.

At the risk of being charged with partisanship toward a council on which I have long served, I want to say that few forces in the United States are working so consistently and so effectively for the good of the people as is the Council on Medical Education and Hospitals. Thirty-five years ago, just after the Boer War, a medical officer of the British army told me this: He said that his government had issued orders to the army in South Africa that graduates of any European medical school be accepted without question for the service, but not the graduates of American schools; these last must be examined. This humiliated me greatly, largely because I knew that that order had been issued with good reason. While at that time we had many of the best medical schools in the world, we also had the poorest. In fact, it can almost be said that we were distinguished by having all of the poorest. Now, thanks to the Council on Medical Education and Hospitals, that is all changed, and if I were today to meet that European medical officer I could truthfully say that of the schools that are recognized in this country none can be classed as poor, that our average is

the equal of their best, and that our best is unequaled in the world. But this is only the beginning. Much important work in this field lies ahead and I bespeak for this council your sympathetic help and your continued liberal support.

As the Association continues to grow in strength and usefulness there is the danger that it will take on a separate identity that will lead physicians to look on it as distinct and as far removed from their more intimate state organizations. If such a feeling should develop there would be lost that closeness of contact which is so necessary for the good of our undertakings. The officers and trustees are doing everything possible to forestall such a development, but the greatest responsibility in this regard lies with the members of the House. If you gentlemen will continue to recognize your responsibility, if you will take it on yourselves to keep your constituents advised of the activities of the Association and above all will let them feel that the American Medical Association is quickly responsive to their wishes, that cordiality of feeling between this association and its constituent state associations so necessary for the good of organized medicine will be maintained unimpaired. The several state associations must understand, too, that in the choice of delegates they should continue to select men who have vision and courage, and particularly those who through familiarity with the everyday practice of medicine will be able faithfully to reflect the views of the great body of practitioners for whom it is the privilege of the Association to speak. I think it not inappropriate, too, to remind the fifteen sections that comprise the Scientific Assembly that in the selection of their delegates their choice should rest on men who not only are keenly alert to the needs of that particular division of medicine which they have the honor to represent but also are willing at all times to take a broad interest in all of the deliberations of this House and to make their influence felt.

We have been sailing on rough seas. No doubt there is still some bad weather ahead, but I believe that the worst of the storm has passed and that through the exercise of the same courage, patience, good judgment and steadfastness of purpose which you have exhibited in the past you will be able soon to steer this ship into calmer waters. After that, it will be smooth sailing under bright skies.

REPORTS OF OFFICERS

Report of the Secretary

Dr. Olin West presented his report as Secretary, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary.

Report of the Board of Trustees

Dr. J. H. J. Upham, Chairman, presented the report of the Board of Trustees, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary. He submitted the following supplementary statement: At the last session in Cleveland, the House of Delegates instructed the Board of Trustees to carry on correspondence, or to ask for details in regard to the attempt made by the American College of Surgeons at that time to dominate and control medical practice. Through the Secretary, the Board of Trustees has carried on correspondence, but owing to the recent changes that have occurred the Board of Trustees suggests that this matter be continued for the time being.

Address of Vice President George G. Reinle

The Vice Speaker introduced the Vice President, Dr. George G. Reinle, Oakland, Calif., who addressed the House as follows:

We fully appreciate, Mr. Speaker, and members of the House of Delegates, the honor which you conferred on the California Medical Association and me. I have no address, being conscious of the important business that is to come before the House, but I should like to bring this message to you: You realize what we have to contend with in California. You have heard of Upton Sinclair and of many others, but I assure you that, through the efforts of the California Medical Association in guiding legislation, the medical service rendered to the people of California will be in the future, as it has been in the past, not disturbed.

Report of the Judicial Council

Dr. George E. Follansbee, Chairman, presented the following report of the Judicial Council, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

Contrary to what might be expected, the amount of work coming before the Judicial Council during the past year has not increased over former years. This might be due to the clarification of the Principles of Medical Ethics accomplished by the House of Delegates at the 1933-1934 sessions, giving a better understanding of the principles and a more active application of them. But one meeting since the last annual session has been necessary to care for the routine activities, which consisted almost entirely of questionable applications for Fellowship and complaints of unethical situations in hospitals.

MEMBERSHIP IN STATE ASSOCIATIONS

It is a practice in a few constituent associations to admit to membership in the state association (1) physicians who are nonresidents of the state and therefore not members in any component society of the state, or (2) physicians resident in the state who for some reason are not members of the county society where they live or practice. Such a procedure is reprehensible in a democratic organization such as the American Medical Association. Membership in the state association and Fellowship in the American Medical Association without membership in a component county medical society extends special privileges not open to other members in the state or the general Fellows in the American Medical Association. The theory on which the American Medical Association is built arises from the broad basis of the county medical society, all of whose members are members of the state association and the national body, and all of whom have definite responsibilities for maintenance of the entire organization. There should be no privileged group to enjoy the advantages presented by the higher bodies without supporting the lower body, which makes the higher bodies possible. The constitution of the Association states that "members in good standing of the constituent association are the members of the American Medical Association, subject, however to the provisions of the by-laws regarding members." Nowhere does the constitution or the by-laws state that membership in a component society is essential to membership in the state society, though the intent is clear in the by-law covering membership and Fellowship in the American Medical Association on transfer of residence from one state jurisdiction to another. Membership in two state associations is as inconsistent as being a voter in two states or two congressional districts. Furthermore, representation in the House of Delegates is based not on the number of members in the county societies of the states but on the number of members in the state association. A state association that carries on its membership roll nonmembers of the component societies may very possibly have an unjustified representation in the House. In the opinion of the Judicial Council, membership in a component society should absolutely be essential to membership in a state association.

IMPROVED METHODS OF ADMINISTERING THE PRINCIPLES OF MEDICAL ETHICS

The Judicial Council in the past has made recommendations to the House of Delegates which, by their recognition and adoption throughout the constituent associations, have resulted in improved conditions under which medical service is made available to the public. Reference especially is made to discussions and pronouncements regarding all forms of contract practice, whether by individual or grouped physicians, hospitals, dispensaries, teaching institutions, or insurance or industrial companies. Much remains to be accomplished, but the course has been clarified and more complete progress awaits only the appropriate action of the chosen representatives of our county, state and national medical organizations.

As the direct result of medical society endeavors to cultivate public understanding of the declared purposes of such societies in relation to sickness prevention and sickness service, public interest in them has been enormously increased in the past five

years. Discussions formerly confined to medical society programs and publications have become public property, and in the public press economic, social and legislative problems having health features, whether such problems are of local or of national interest, are generally acknowledged as the responsibility of the medical profession. With this widening recognition, however, has come a growing convergence of public attention on the motives and the professional activities of the members of our profession, and it is to the disciplinary responsibility of component societies for the ethical conduct of their members that the Judicial Council wishes to call attention at this time.

Public confidence in our avowed declarations for medical control over things medical cannot be successfully cultivated or maintained unless we exclude or remove from the ranks of our organized profession those who ignore our ethical code, especially as it applies to the true professional spirit in our relations with each and every patient. It is apparent that the very democracy of our existing set up may become involved unless our county and state societies rapidly develop to meet adequately local situations arising from the professional activities of a small but thoughtless or indifferent proportion of members. If the societies will not exercise their prerogative or discharge their duties in this connection, will it become advisable to extend the disciplinary functions now resting in the county society to the state association and possibly to the national administration? History, tradition and our constitution stand for local control, but the public policy of our Association has become such that we cannot turn back from it and ethical problems of major importance are pressing for solution.

In general, the Principles of Medical Ethics are accepted as a guide in professional relations and are intelligently and faithfully followed by a large majority of the profession. There are, however, more or less isolated instances in which this is not true. The delinquents comprise individuals, groups and institutions. Solicitation of patients, particularly in industrial practice; unfair competition by clinics and groups, and unethical and unlawful practice of medicine by hospitals, dispensaries, insurance companies and universities are examples.

Ordinarily under present by-laws of county, state and national associations procedure to correct an unethical practice must be instituted in the county medical society by the preferring of charges, which in practice is left to some individual who feels aggrieved. Few individuals feel it their personal responsibility to prosecute a breach of ethics that affects them personally but little but which may affect the profession of medicine in a major degree. The institution of charges by an individual in such cases of general concern might very probably in many instances amount to professional suicide, and seldom does any individual desire to place himself on his own initiative in the position of prosecutor for the benefit of the profession as a whole and bring on himself the unfriendliness and antagonism of colleagues often in influential positions. Numerous are the complaints against the situation cited and many are the demands that medical organization correct for its members that which medical organization has pronounced unethical and harmful and which the members cannot correct for themselves. Last year the House of Delegates amended its Principles of Medical Ethics so clearly that there can be no misunderstanding of the conditions mentioned; but the present method of procedure of preferring charges makes the pronouncement ineffective.

The problem is similar to law enforcement in local communities, states and the nation. If in enforcement of the law the institution of proceedings were left to the voluntary action of an individual, personal animus would be the controlling motive and only minor infractions would be handled. Society has found that it needs a system representing society as a whole, of grand jury investigation and indictment, a public prosecutor, and an impartial court with the right of appeal to higher courts. Medicine in this age needs a similar system for enforcement of its ethical and economic principles. Such a system of medical jurisprudence is needed most and would be applicable in the larger county medical societies. The body bringing the indictment and the prosecutor would lose their personal identity in their representation of the medical profession as a whole, and no stigma, but rather honor, would attach to them.

It might be advisable to extend the origination of charges in some situations manifestly too great for the county society to handle to the state association and possibly, in rare instances, to the national organization. There rarely would be infractions of such magnitude that the national association and seldom that the state associations should be the originator of any action toward discipline. If and when the House of Delegates sees fit to extend original jurisdiction in matters of discipline to the national organization, the Judicial Council suggests that it should have the duties and powers now conferred on it but it should not at any time be placed in an ex parte position. In those instances of abuse of such nature or such magnitude as to warrant national rather than state or county institution of proceedings, there should be some other body, either now in existence or created, to act as grand jury to investigate and, if deemed proper, prepare an indictment against the accused. In case of indictment, the Board of Trustees should assign the prosecution to some one of their choice and the case should be tried before the Judicial Council, which under such procedure would not be under suspicion of prejudice.

The Council wishes to be distinctly understood that it is suggesting no infringement on or release from responsibilities now residing in the component county medical societies. On the contrary, its idea is to assist and complement those societies in performance of the duties now imposed on them and to supplement their activities by methods applicable to conditions and situations too general or too large to be handled within their limited jurisdiction. We commend to the House of Delegates the urgency of prompt and firm action by all component societies in enforcement of the provisions of the Principles of Medical Ethics that will support the growth of public confidence in the sincerity of our avowed ethical principles.

COOPERATION BETWEEN COUNCILS

Some of the common causes of complaints could probably be controlled by a closer coordination between the various councils, particularly the Council on Medical Education and Hospitals and the Judicial Council. The Judicial Council, by the constitution, is the final authority on ethics. Medical ethics follows every member of the American Medical Association, whether in a hospital, a university, a clinic, or not. While the member in such institution is subject to the ethics of the profession, the institution itself as an entity is not, but through the Council on Medical Education and Hospitals sufficient oversight, persuasion and, if needed, pressure can be brought to accomplish what the doctors in such institutions, as individuals, cannot. With such cooperation between the two councils and such enforcing organization as has been suggested, many harmful and obnoxious practices now existing would cease and others not now presenting any large problem would be prevented. The Principles of Medical Ethics, while followed by the large majority of the profession, are looked on only as a theory by some in the profession and considered—if considered at all—by many not in the profession as simply a uniform to be worn while "on parade." When people, laymen as well as members of our profession, realize that the Principles of Medical Ethics are the basic principles of honest, fair dealing and that their observance is necessary to the best interests of the whole people, laymen as well as the members of the profession, medical practice will have taken a long step upward, medicine will have more dignity and authority, and people will be better served.

Respectfully submitted.

GEORGE EDWARD FOLLANSBEE, Chairman.
WALTER F. DONALDSON.
EDWIN P. SLOAN.
JOHN H. O'SHEA.
EMMETT P. NORTH.
OLIN WEST, Secretary ex officio.

Report of the Council on Medical Education and Hospitals

General Merritte W. Ireland, Washington, D. C., presented the report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Medical Education.

RESOLUTION ON TRAINING OF INTERNS

General Ireland, in behalf of the Council on Medical Education and Hospitals, then presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, The training of interns is one of the most important phases of medical education for which the responsibility must rest with hospitals rather than with medical schools; and

WHEREAS, The most advantageous training of interns can be completed only through the intelligent and painstaking efforts of the physicians who compose the staff; therefore be it

Resolved, That the officers and members of state and county societies be urged to give due consideration to the problems of intern training in the approved hospitals with which they may be connected.

Report of the Council on Scientific Assembly

Dr. Irvin Abell, Kentucky, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

NEW BUSINESS

Resolution on Broadcasting Misinformation Pertaining to Medicaments, Foods and Cancer

Dr. Holman Taylor, Texas, introduced the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

The State Medical Association of Texas, on May 15, 1935, unanimously adopted resolutions condemning the broadcasting of misinformation pertaining to medicaments, foods and cosmetics, with particular reference to the curability of cancer. As secretary of the State Medical Association of Texas, I was directed to submit this resolution to the House of Delegates of the American Medical Association, at its immediately forthcoming annual session in Atlantic City, which, as a delegate to the American Medical Association, I take pleasure in doing. The resolution is, for obvious reasons, submitted as adopted by the State Medical Association of Texas, as follows:

WHEREAS, The State Medical Association of Texas and the American Medical Association have repeatedly protested exploitation over the radio of exaggerated claims for medicaments, foods and cosmetics without merit; and

WHEREAS, Attempts have been made in the past and are now being made to evade the restrictions which the United States government has placed on such broadcasting by the establishment of broadcasting stations in Mexico; and

WHEREAS, There are being broadcast at this time from a station in Mexico false and exaggerated statements concerning the curability of cancer; and

WHEREAS, Such statements lead not only American citizens but also those of Mexico into the expenditure of money for what is essentially a false and unestablished method of treatment of this disease; therefore be it

Resolved, That the State Medical Association of Texas present to the Federal Communications Commission of the United States a petition requesting the Federal Communications Commission to inform the government of Mexico concerning the hazards to health concerned in such broadcasting; and also that the secretary of the State Medical Association of Texas be authorized to present to the established authorities of Mexico concerned with the control of broadcasting from that nation the facts in relationship to this fraudulent broadcasting of a cure for cancer and request such authorities to exercise their power in discontinuing this menace to the citizens of both republics.

Resolution on Appointment of Committee to Investigate and Formulate Standards Governing the Manufacture of Catgut for Surgical Use

Dr. Grant C. Madill, New York, presented the following resolution, adopted by the house of delegates of the Medical Society of the State of New York, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The qualities desired in catgut for human use are absolute sterility and absorbability; and

WHEREAS, Most catgut supplied for service on human bodies is manufactured for profit; and

WHEREAS, Recent reports indicate that infected catgut or incompletely sterilized catgut is being sold; and

WHEREAS, This constitutes a menace to the public; be it

Resolved, That the house of delegates of the Medical Society of the State of New York, through its delegates to the American Medical Association, memorialize the House of Delegates of the American Medical Association to set up a committee or such agencies as will investigate and elaborate standards and in general formulate a policy in regard to catgut as will safeguard the community.

Resolution Seeking the Enactment of National Legislation to Obviate the Evil of Radio Broadcasting of Medical Misinformation

Dr. James F. Rooney, New York, presented the following resolution, adopted by the house of delegates of the Medical Society of the State of New York, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The public health is undermined by radio broadcasts purporting to impart medical information to the public either as sustaining programs or as part of advertising campaigns; and

WHEREAS, This information is usually broadcast by nonmedical persons who can hardly realize the fallacies of the things they broadcast; and

WHEREAS, This leads to misinformation, which conceivably also might cause health damage to those of the listening audience who followed it; therefore be it

Resolved, That the house of delegates of the Medical Society of the State of New York instruct their delegates to the American Medical Association to bring this to the attention of the House of Delegates of the American Medical Association to the end that suitable national legislation be enacted to obviate this evil and threat to the public health.

Resolutions on Contraception

Dr. George W. Kosmak, New York, presented the following resolution, adopted by the house of delegates of the Medical Society of the State of New York:

WHEREAS, State and federal legislation governing control of reproduction is conflicting and renders certain phases of medical practice illegal, it is important that the medical profession as a whole should undertake to clarify and lead in the solution of these questions which involve medical practice and procedures. The importance of such control in medical practice, where such control constitutes a therapeutic measure, is obvious to all medical men;

Resolved, That the house of delegates of the Medical Society of the State of New York recommends to the House of Delegates of the American Medical Association that it officially sanction the appointment by the Board of Trustees of a committee to study carefully all these related problems and formulate at least a preliminary report to be presented to the 1936 session of the House of Delegates of the American Medical Association.

It was moved by Dr. William H. Mayer, Pennsylvania, seconded by Dr. E. G. Wood, Tennessee, and carried, that a Special Reference Committee be appointed to consider this subject, and the Vice Speaker announced that such committee would be appointed and the matter brought before the House in Executive Session.

The Vice Speaker also referred to the Special Reference Committee, without reading, similar resolutions received from the following societies: Arkansas Medical Society; Berks County (Pa.) Medical Society; Chicago Orthopedic Society; Clinico-Pathological Society of Washington, D. C.; Medical Society of the District of Columbia; Gage County (Neb.) Medical Society; Maine Medical Association; New Mexico Medical Society, and Portage County (Ohio) Medical Society.

Resolution on Solicitation of Votes

Dr. Isaac A. Abt, Section on Pediatrics, presented the following resolution, which was referred to the Judicial Council:

Under the Standing Rules of the House of Delegates, page 53 of the Constitution and By-Laws, a section entitled "Solicitation of Votes," adopted by the House of Delegates at Saratoga Springs, N. Y., June 13, 1902, reads as follows: "*Resolved*, That it is the sense of the House of Delegates of the American Medical Association that the solicitation of votes for office is not in keeping with the dignity of the medical profession, nor in harmony with the spirit of this Association, and that such solicitation shall be considered a disqualification for election to any office in the gift of the Association."

Resolved, That the Judicial Council be requested to inform this House of Delegates whether said section of the Standing Rules is still in force and whether any person who is elected or nominated in violation of said rule is legally eligible for nomination or election to an office in the American Medical Association.

Resolutions on Contraception

Dr. Leonce J. Kosminsky, Arkansas, presented the following resolutions, adopted by the Arkansas Medical Society, which were referred to the Special Reference Committee:

WHEREAS, The provisions of section 211, 245, 311 and 312 of the United States Penal Code dealing with contraception:

(1) Seriously reflect on the integrity and propriety of the medical profession;

(2) By hampering physicians in private and clinical practice in obtaining supplies tend to prevent them from giving adequate contraceptive advice even in cases where it is necessary to conserve health or life itself;

(3) Prevent the publication of all contraceptive information in medical textbooks and medical journals, resulting in widespread ignorance on the part of the medical profession on this important subject and interfering with the instruction of medical students and practitioners concerning it; and

(4) Constitute an unwarranted interference of the United States with the right of each state to control the practice of medicine within its jurisdiction as it may see fit; and

WHEREAS, Legislation is now pending in the Congress that, if enacted into law, would make the provisions of the federal penal statutes concerning contraception even more rigorous; and

WHEREAS, The whole subject is seriously in need of scientific study and investigation in order that standards of effectiveness and safety may be set up; and

WHEREAS, The medical profession and the public have the right to look to the American Medical Association to assume the rôle of leadership in both the scientific and the legal phases of contraception; therefore be it

Resolved, That the house of delegates of the Arkansas Medical Society requests the House of Delegates of the American Medical Association to initiate a comprehensive program with respect to contraception, instructing its appropriate agencies to undertake the necessary scientific study and to make every legitimate effort to have federal and state laws so amended as to remove restrictions now affecting physicians, and that the secretary be instructed to forward a copy of this resolution to the Secretary of the American Medical Association; and be it further

Resolved, That the delegates of the Arkansas Medical Society to the American Medical Association be instructed to urge and vote for such a program.

Dr. Henry C. Macatee, District of Columbia, introduced the following resolutions, adopted by the Medical Society of the District of Columbia, which were referred to the Special Reference Committee:

WHEREAS, The medical profession and the public have the right to look to the American Medical Association to assume a rôle of leadership in both the scientific and the legal phases of all branches of medical practice; and

WHEREAS, The whole subject of birth control is seriously in need of scientific study and investigation; be it

Resolved, That the Medical Society of the District of Columbia request the House of Delegates of the American Medical Association to initiate a comprehensive program with respect to the study of birth control, instructing its appropriate agencies to undertake the necessary scientific study; and be it further

Resolved, That our delegate to the House of Delegates be instructed to urge, and vote for, the adoption of such a program of investigation, and that the secretary be hereby instructed to forward a copy of these resolutions to the Secretary of the American Medical Association.

Resolution on Care of the Indigent

Dr. Henry C. Macatee, District of Columbia, presented the following resolution, adopted by the Medical Society of the District of Columbia, which was referred to the Reference Committee on Medical Economics:

WHEREAS, The American Medical Association, at its session in Milwaukee in 1933, endorsed the Minority Report of the Committee on the Costs of Medical Care, which recommends that "Government care of the indigent be expanded with the ultimate object of relieving the medical profession of this burden"; and

WHEREAS, Physicians bear, and under any conditions will continue to bear, an enormous part of this burden as their private philanthropy, growing out of their habitual acceptance of personal and individual obligations to the poor, and since, therefore, the recommendation quoted refers to the burden of medical care for that large class of indigent which is a direct charge on society as a whole; and

WHEREAS, Since this particular burden is preponderatingly undertaken by the medical profession because of the very real but intangible advantages of increased experience, skill and prestige that are to be derived from appointments to hospital and dispensary staffs, a situation is created that results in: (1) a tendency to promote and facilitate the practice of medicine by hospitals, (2) a demonstrable failure to provide adequate care for other than the more serious medical hazards of the indigent group, and (3) lack of protection to society as a whole against the spread of infectious diseases of all types from the foci thus maintained; and

WHEREAS, The desire to provide adequate medical care for this group should not be based on a lofty altruism alone but equally, as has been indicated, on sound considerations affecting the public health, and on the very necessary realization on the part of the medical profession that it cannot expect and should not attempt to attain economic security for itself except as a by-product of a social readjustment that assures the availability of the curative, preventive and rehabilitating facilities of modern medicine to all classes of the people, including the entirely indigent; and

WHEREAS, All current plans, whether sponsored by medical or socio-economic groups, for effecting a wider and more uniform availability of medical facilities for all fail adequately to provide curative, to say nothing of preventive, medical care for the indigent; and

WHEREAS, Any plan keeping within the confines of a capitalistic rather than a socialistic concept of society must, from the point of view of equity as well as from that of practical accomplishment, recognize the profit motive (using this term in its strict economic sense) on the part of physicians if their services are to be secured for this group; therefore be it

Resolved, That the Medical Society of the District of Columbia urge the House of Delegates of the American Medical Association to request the Board of Trustees to instruct the Bureau of Medical Economics, in evaluating any plans for securing medical economic security, to give due weight to the facts set forth in this preamble, and to study, investigate, and at the next session report as to the advisability of securing adequate funds to be derived from public taxation to remunerate physicians for services that, while rendered to the indigent, are in the interest of, and hence properly chargeable to, society as a whole, and as to methods for assuring that such funds shall be so administered and disbursed as to avoid a bureaucratic control subject to political exploitation.

Resolution on Medical Service Organizations

Dr. Henry C. Macatee, District of Columbia, introduced the following resolution, adopted by the Medical Society of the District of Columbia, which was referred to the Reference Committee on Medical Economics:

WHEREAS, At the meeting of the American Medical Association at Milwaukee in 1933 the House of Delegates endorsed "the Minority Report of the Committee on Costs of Medical Care as expressive, in principle, of the collective opinion of the medical profession," commended the plan of the Medical Society of the District of Columbia to educate and inform its constituency regarding the socio-economic aspects of medical practice, and recommended similar activities to the favorable consideration of other constituent associations; and

WHEREAS, Among the recommendations of the said Minority Report the following may be found: "That steps be taken to bring about better coordination of the medical resources of the" communities of the Nation, and "that careful trial be given to methods which can rightly be fitted into our present institutions and agencies without interfering with the fundamentals of medical practice"; and

WHEREAS, Under the impetus of the said report, bearing the endorsement of the American Medical Association, many constituent county and state societies have set up experimental medical service organizations for the accomplishment of the two recommendations quoted, with the result of creating widespread interest in the movement and a desire on the part of other communities to profit by the experience of existing projects before setting up similar experiments of their own; and

WHEREAS, It has been the experience of those conducting the management of such medical service bureaus that the details of organization and administration cannot successfully be conveyed by written description; and

WHEREAS, It has been the experience of the Medical Economic Security Administration for the District of Columbia, probably duplicated by the experience of similar projects elsewhere, that the demand for information and assistance cannot be met by local resources of time and money and personnel; therefore be it

Resolved, That the House of Delegates recommend to the Board of Trustees that the more promising of the medical service organizations operating under the auspices of constituent societies of the American Medical Association be, by invitation, taken under the sponsorship of the American Medical Association as its collective experimental endeavor to bring about an acceptable adjustment of medical resources to popular needs, and that funds be appropriated to be expended through the Bureau of Medical Economics (*a*) in the form of grants to meritorious projects when necessary or advisable to carry them from their inception until self supporting, or for undertaking necessary or desirable additions to the basic experiment for statistical or other purposes, and (*b*) to provide for the free exchange of methods of organization and operation and experience in administration by defraying the necessary travel and other expenses of executive personnel of such projects in operation or in process of formation, or in such other ways as may be found necessary or desirable.

Resolution on Preparation of a Statement Regarding Medical Service Experiments

Dr. Henry C. Macatee, District of Columbia, presented the following resolution, adopted by the Medical Society of the District of Columbia, which was referred to the Reference Committee on Medical Economics:

WHEREAS, The American Medical Association has repeatedly expressed its opposition to any form of state-administered health insurance and has presented cogent reasons for its opposition; and

WHEREAS, One of the controlling reasons for opposition is that no experimental approach to the application of the principle of state health insurance in America has been proposed, and no such experimental

approach can be made without setting up politically controlled machinery expensive to maintain and difficult to destroy; and

WHEREAS, In view of the universally recognized need of better adjustment of medical resources to the requirements of the people in the low-income class, the medical profession has undertaken in many parts of the country to effect the needed readjustment by the use of social devices suited to the problems and facilities of the respective localities; and

WHEREAS, The American Medical Association has undertaken the sponsorship of these projects for the purposes of study, coordination and extension; therefore be it

Resolved, That the Board of Trustees cause to be prepared a statement setting forth the number and location of the medical service experiments under the supervision and sponsorship of the American Medical Association, their purposes and accomplishments, and transmit the same to the President of the United States as an evidence that the medical profession itself is endeavoring in a truly scientific experimental way to solve the problems of medicosocial maladjustment by utilizing methods and agencies familiar to the American people and integral with American life.

Resolution on Establishment of Courses in Medical Economics in All Medical Colleges in This Country

Dr. Walter F. Donaldson, Pennsylvania, introduced the following resolution, sponsored by the board of trustees of the Medical Society of the State of Pennsylvania, which was referred to the Reference Committee on Medical Education:

WHEREAS, The Committee on Medical School Curricula of the Commission on Medical Economics of the Philadelphia County Medical Society has collected data, as indicated by the accompanying table, indicating a receptive attitude on the part of the faculties of the medical colleges of the United States toward the establishment of courses in medical economics in these schools, in that sixty of the seventy-one class A medical schools of the country have established, or are willing to establish, such courses;

Therefore, the Board of Trustees of the Medical Society of the State of Pennsylvania has instructed its delegates to the House of Delegates of the American Medical Association to introduce this resolution at the Atlantic City session, urging the Council on Medical Education and Hospitals and the Bureau of Medical Economics of the Association to continue their endeavors until courses in medical economics have been established in all the medical colleges in this country.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY
COMMISSION ON MEDICAL ECONOMICS

Section for Investigation of Certain Phases of Teaching in Medical Schools, Joseph W. Post, M.D., Chairman.

ANNUAL REPORT

The Section for Investigation of Certain Phases of Teaching in Medical Schools has conducted a survey covering seventy-one recognized medical colleges throughout the United States to ascertain those colleges which are at present teaching medical economics as well as the attitude of the deans as to the value of such teaching.

With this end in view, the following questionnaire was prepared and mailed to the dean of each of the seventy-one institutions:

1. University of Oklahoma School of Medicine, Oklahoma City.
2. State University of Iowa College of Medicine, Iowa City.
3. University of Colorado School of Medicine, Denver.
4. Yale University School of Medicine, New Haven, Conn.
5. University of Pennsylvania School of Medicine, Philadelphia.
6. Hahnemann Medical College, Philadelphia.
7. New York Homeopathic Medical College and Flower Hospital, New York.
8. University of North Dakota School of Medicine, Grand Forks, N. D.
9. University of Minnesota Medical School, Minneapolis.
10. Tulane University of Louisiana School of Medicine, New Orleans.
11. Albany Medical College, Albany, N. Y.
12. University of Michigan School of Medicine, Ann Arbor.
13. University of Louisville School of Medicine, Louisville, Ky.
14. University of Cincinnati College of Medicine, Cincinnati.
15. Temple University School of Medicine, Philadelphia.
16. Georgetown University School of Medicine, Washington, D. C.
17. University of Vermont College of Medicine, Burlington, Vt.
18. University of Missouri School of Medicine, Columbia, Mo.
19. University of Alabama School of Medicine, Mobile.
20. Loyola University School of Medicine, Chicago.
21. Baylor University College of Medicine, Dallas, Texas.
22. Boston University School of Medicine, Boston.
23. University of Oregon Medical School, Portland.
24. Columbia University College of Physicians and Surgeons, New York.
25. University of Pittsburgh, Pittsburgh.
26. Creighton University School of Medicine, Omaha.
27. College of Medical Evangelists, Loma Linda, Los Angeles.
28. Women's Medical College of Pennsylvania, Philadelphia.
29. University of Kansas School of Medicine, Lawrence and Kansas City, Kan.
30. Emory University School of Medicine, Atlanta, Ga.
31. Rush Medical College, University of Chicago.
32. University of Illinois College of Medicine, Chicago.
33. Washington University School of Medicine, St. Louis.
34. Indiana University School of Medicine, Bloomington and Indianapolis.
35. Medical College of the State of South Carolina, Charleston.
36. University of Georgia School of Medicine, Augusta.
37. University of Texas School of Medicine, Galveston.
38. Harvard University Medical School, Boston.
39. Western Reserve University School of Medicine, Cleveland.
40. University of Nebraska College of Medicine, Omaha.
41. University of Arkansas School of Medicine, Little Rock.
42. Tufts College Medical School, Boston.
43. Stanford University School of Medicine, San Francisco.
44. University of California Medical School, Berkeley and San Francisco.
45. Duke University School of Medicine, Durham, N. C.
46. Cornell University Medical College, Ithaca, N. Y.
47. Johns Hopkins University School of Medicine, Baltimore.
48. School of Medicine of Division of Biological Sciences, University of Chicago.
49. Dartmouth Medical School, Hanover, N. H.
50. Ohio State University College of Medicine, Columbus.
51. St. Louis University School of Medicine, St. Louis.
52. Louisiana State University Medical Center, New Orleans.
53. University of Rochester School of Medicine, Rochester, N. Y.
54. University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore.
55. University of North Carolina School of Medicine, Chapel Hill.
56. University of Mississippi School of Medicine, University.
57. Wayne University School of Medicine, Detroit.
58. New York University, University and Bellevue Hospital Medical College, New York.
59. Long Island College of Medicine, Brooklyn.
60. University of Southern California School of Medicine, Los Angeles.

The colleges which did not respond to the questionnaire were:

1. Jefferson Medical College, Philadelphia.
2. George Washington University School of Medicine, Washington, D. C.
3. Howard University College of Medicine, Washington, D. C.
4. Northwestern University Medical School, Chicago.
5. Syracuse University College of Medicine, Syracuse, N. Y.
6. University of Buffalo School of Medicine, Buffalo.
7. University of South Dakota School of Medicine, Vermillion.
8. University of Tennessee College of Medicine, Memphis.
9. Vanderbilt University School of Medicine, Nashville, Tenn.
10. University of Virginia Department of Medicine, Charlottesville, Va.
11. University of Wisconsin Medical School, Madison.

Following is a copy of the questionnaire sent to all the medical schools above referred to:

Feb. 21, 1935.
Dear Sir:—

As chairman of the Section for Investigation of Certain Phases of Teaching in Medical Schools of the Philadelphia County Medical Society, I am endeavoring to get a general survey of the same and am requesting your hearty cooperation.

With this end in view, would you kindly answer the following questions and make any additional comments which you might deem helpful to this study:

1. (*a*) Is the subject of medical economics given any consideration in your college curriculum? (*b*) If so, will you forward outline and particulars of same?

2. What is your attitude toward the teaching of medical economics to the undergraduate medical student?

3. Do you believe that a comprehensive survey of the subject, as well as training in actual business methods in practice, would make the graduate a more valuable asset to his profession and community?

4. When do you consider the most propitious time for teaching this subject and how could it best be accomplished?

5. Would you be willing to cooperate with your local county medical societies in an effort to instruct students along these lines?

6. Is any stress laid on the teaching of periodic health examinations other than the regular routine subject of physical diagnosis?

Our Commission on Medical Economics of the Philadelphia County Medical Society feels that a great benefit can be derived from a careful consideration of the foregoing and therefore trust that you will add your valuable counsel.

Respectfully yours,

JOSEPH W. POST, M.D., Chairman,
1930 Chestnut St., Philadelphia.

To date we have received replies from sixty (83 per cent) of those to whom questionnaires were sent and our analysis of each of the five questions is as follows:

QUESTION 1.—(*a*) Is the subject of medical economics given any consideration in your curriculum? (*b*) If so will you forward outline of same?

Thirty-three, or 55 per cent, are teaching this subject either by a set course or by lectures in some form.

Twenty-seven, or 45 per cent, give the subject no consideration.

The thirty-three colleges registering in the affirmative are as follows: Nos. 1, 3, 4, 9, 10, 11, 14, 15, 18, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 40, 44, 45, 46, 47, 48, 50, 51, 52, 57, 58, 59, 60.

Those colleges giving no consideration to the subject are: Nos. 2, 5, 6, 7, 8, 12, 13, 16, 17, 19, 20, 21, 22, 23, 25, 36, 37, 38, 39, 41, 42, 43, 53, 54, 55, 56, 49.

QUESTION 2.—What is your attitude toward the teaching of medical economics to the undergraduate medical student?

This question was answered favorably by forty-eight (80 per cent) of the colleges as follows: Nos. 1, 2, 3, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 43, 45, 46, 47, 48, 50, 52, 53, 54, 55, 56, 57, 58, 59, 60.

Unfavorable replies were registered from ten (17 per cent) of the colleges as follows: Nos. 4, 5, 6, 7, 38, 39, 40, 42, 44, 51.

Institutions 41 and 49 did not answer this question.

QUESTION 3.—Do you believe a comprehensive survey of the subject, as well as training in actual business methods in practice, would make the graduate a more valuable asset to his profession and community?

Forty-one, or 69 per cent, of those replying answered in the affirmative and comprised the following: Nos. 1, 2, 3, 5, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 40, 45, 46, 50, 52, 53, 54, 55, 57, 59, 60.

The unfavorable replies were from: Nos. 4, 6, 7, 8, 29, 37, 38, 39, 42, 43, 44, 47, 48, 51, 56, 58, a total of sixteen, or 26 per cent.

Nos. 20, 41, 49 did not answer the question. This represents 5 per cent.

QUESTION 4.—When do you consider the most propitious time for teaching this subject and how could it best be accomplished?

1st year	1
2d year	1
3d year	2
3d and 4th years	6
4th year	43
Intern's year	3
Intern's year	1
Societies	1

One college felt that it should be incidental as the occasion arose.
Ten colleges did not answer the question.

QUESTION 5.—Would you be willing to cooperate with your local society in an effort to instruct students along this line?

Forty-one (68 per cent) answered affirmatively.

Eight (13 per cent) answered negatively.

Eleven (18 per cent) gave no answer.

Supplementing the replies to the questionnaire we have obtained some valuable data from those institutions which are already teaching medical economics.

The individual comments from the authors of these replies constitute, we feel, a favorable attitude toward the necessity for enlarging on the teaching of this important subject.

Our committee therefore recommends that the résumé of this survey be referred through proper channels to the Bureau of Medical Economics of the American Medical Association, with resolutions that a course in medical economics be added to medical college curricula.

The committee would also suggest that the data of those courses and lectures obtained from this survey be used as a basis for such a training.

We would furthermore recommend that a copy of this report be mailed to each of the deans of the colleges contacted along with a letter of thanks to those responding, for their whole hearted cooperation.

The committee desire to acknowledge their sincere appreciation to Mr. Franklin M. Crispin and the Secretarial staff of the Philadelphia County Medical Society for their valuable assistance in making this survey.

Respectfully submitted,

JOSEPH W. POST, M.D., Chairman.

Resolution Making Membership a Prerequisite for Qualification as Specialist on List of Council on Medical Education and Hospitals

Dr. William R. Brooksher, Arkansas, presented the following resolution, adopted by the Arkansas Medical Society, which was referred to the Reference Committee on Medical Education:

WHEREAS, The Council on Medical Education and Hospitals of the American Medical Association has published a list of qualified specialists in pathology and radiology, these physicians having been found to qualify according to "essentials" proposed by the Council on Medical Education and Hospitals and approved by the House of Delegates of the American Medical Association; and

WHEREAS, Such a listing is felt to be a definite contribution toward the elevation of the standards of these specialties; and

WHEREAS, These essential qualifications do not include the requirement that a physician so designated shall be a member of his county and state medical society; therefore be it

Resolved, That the House of Delegates of the American Medical Association request the Council on Medical Education and Hospitals of the American Medical Association to make membership in respective county and state medical societies a prerequisite for qualification as a specialist on the Council's list.

Special Reference Committee

The Vice Speaker appointed the following as members of the Special Reference Committee:

E. R. Cunniffe, Chairman.....New York
A. A. Walker.....Alabama
J. Allen Jackson.....Pennsylvania
E. H. Cary.....Texas
T. Henshaw Kelly.....California

The meeting recessed at 12:25 p. m. to reconvene on Tuesday morning, June 11, at 9:30.

(To be continued)

Association News

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45 Chicago daylight saving time (3:30 central standard time). The next broadcast will be as follows:

June 27. Blood and Fire, W. W. Bauer, M.D.

National Broadcasting Company

The American Medical Association broadcasts under the title "Your Health" on a Blue network of the National Broadcasting Company each Tuesday afternoon from 4 to 4:15 Chicago daylight saving time (3 o'clock central standard time). The next broadcast will be as follows:

June 25. Why Health Insurance?, F. E. Sondern, M.D.

NOTE.—After these talks, broadcasts on both networks will be discontinued until further notice.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

State Medical Election.—Dr. Jesse D. Hamer, Phoenix, was chosen president-elect of the Arizona State Medical Association at its annual meeting in Phoenix, April 24-27, and Dr. Charles R. K. Swetnam, Prescott, was inducted into the presidency. The next annual session of the society will be held at Nogales in May 1936. Guest speakers included Drs. Frederick C. Warnshuis, San Francisco, secretary, California Medical Association; Rexwald Brown, Santa Barbara, Calif.; Frank S. Dolley, Los Angeles, "Present Status of Pulmonary Lobectomy for Bronchiectasis and Carcinoma"; Frederick A. Willius, Rochester, Minn., "The Physiologic Approach to the Treatment of Heart Failure"; Erwin W. Johns, Albuquerque, N. M., "Juvenile Osteochondrodystrophies," and Howard Fleming, San Francisco, "Diagnosis and Treatment of Head Injuries."

CALIFORNIA

Personal.—Dr. Mary Bennett Ritter, Berkeley, was awarded the honorary degree of doctor of laws at the commencement of the University of California, May 18.——Dr. Walter E. Coppedge, Alturas, has been appointed health officer of Modoc County to succeed Dr. John Stile.——Dr. and Mrs. Frank J. Gobar, Fullerton, celebrated their golden wedding anniversary, June 10.

Outbreak of Infantile Paralysis.—An outbreak of infantile paralysis has occurred among the attendants at the Los Angeles County General Hospital, Los Angeles, according to the Chicago *Tribune*, June 17. Thirty-eight positive cases were reported, June 16, among nurses and patients, and sixty-seven cases were under observation. In the week previous to this report, twenty-four cases of the disease were detected at the hospital; four were patients and twenty student nurses.

Bills Passed.—The following bills have passed the senate and the assembly: S. 155, proposing to amend the medical practice act so as to authorize the board of medical examiners to issue a physician's and surgeon's certificate to an applicant who, although failing to furnish documentary evidence satisfactory to the board that he has completed a resident course of instruction fulfilling the requirements of the act, presents a diploma issued to him by a medical school approved by the board and in addition files satisfactory documentary evidence of having either completed the fourth year in an approved medical school in the United States or served at least one year's residence in a hospital in the United States approved by the board for internship; S. 468, proposing to amend the medical practice act so as to authorize courts on the application of the state board of medical examiners to enjoin the unlicensed practice of medicine; and S. 534, proposing to prohibit the admittance of any person to a private psychopathic institution, or any institution for the care

and treatment of persons mentally ill or deranged, without a written statement from at least two licensed physicians that they have examined the patient and that he should be admitted for care and treatment and proposing further that any person in an institution for the care and treatment of the mentally ill must be permitted to communicate at any time with whomsoever he desires. A. 1037 has passed the assembly, proposing to make it unlawful for any person to own, possess, or operate any x-ray device or x-ray laboratory unless such device or such laboratory is operated under the direct supervision of a person licensed by the state board of health. S. 392 has passed the senate, proposing to make it unlawful to conduct a clinical laboratory unless it is under the immediate direction of a licensed clinical laboratory technologist licensed by the state board of health. The provisions of the bill, however, are not to apply to any licensed physician maintaining a laboratory in his own office for use in his own practice.

COLORADO

Society News.—At a joint meeting of the Delta, Montrose and Mesa county medical societies in Delta, May 24, a symposium on cancer of the digestive tract was presented by Drs. John B. Crouch, John B. Hartwell and William F. Drea, Colorado Springs.——Dr. Roy P. Forbes, Denver, addressed the Fremont County Medical Society, April 23, in Canon City, on "Commonly Missed Diagnoses in Pediatrics."——The Northeast Colorado Medical Society was addressed in Sterling, May 9, by Dr. Casper F. Hegner, Denver, on pulmonary surgery.

Dr. Freeman Honored.—The completion of fifty years in the practice of medicine by Dr. Leonard Freeman, professor of surgery, University of Colorado School of Medicine, was observed at a dinner in his honor, June 3, given by the Medical Society of the City and County of Denver. Dr. Casper F. Hegner was toastmaster and Dr. Edward F. Dean, president of the society, presided. Speakers included Drs. George P. Johnston, Cheyenne, Wyo., on "Dr. Freeman, the Teacher"; Thomas A. Stoddard, Pueblo, "Freeman, the Man," and George H. Curfman, Salida, "Dr. Freeman's Influence on Surgery in the West." Dr. Emmet Rixford, professor of surgery emeritus, Stanford University School of Medicine, San Francisco, spoke on "Fifty Years a Surgeon." The presentation of a portrait was made by Dr. Glen E. Cheley and Dr. Frank W. Kenney gave the speech of acceptance. Dr. Freeman was president of the Colorado State Medical Society from 1909 to 1910.

CONNECTICUT

Society News.—Dr. Charles J. Bartlett, New Haven, was chosen president of the Connecticut Association of Public Health and Clinical Laboratories at its meeting in Torrington, May 17, and Dr. Louis P. Hastings, Hartford, vice president. ——Dr. George T. Pack, New York, addressed the New Haven Medical Association, May 15, on "Indications for Radium and X-Ray Therapy of Cancer."

Mental Hygiene Meeting.—Charles-Edward A. Winslow, Dr.P.H., New Haven, was reelected president of the Connecticut Society for Mental Hygiene at its twenty-seventh annual meeting in Bridgeport, May 20. Dr. C. Charles Burlingame, Hartford, was made vice president. This was a joint session with the Bridgeport Society of Mental Hygiene which was holding its eleventh annual meeting.

Bills Enacted.—The following bills have become laws: H. 852, repealing the laws regulating the possession, sale or distribution of narcotic drugs and enacting what apparently is the uniform narcotic drug act; S. 101, authorizing the state department of health to investigate the cause and the prevention and treatment of cancer and to take such steps as may be necessary to reduce the mortality due to cancer; and S. 222, amending the law requiring the licensing of institutions for the treatment and care of insane persons or persons suffering from other abnormal mental or nervous conditions, by authorizing the state department of health, rather than the governor, to license such institutions annually, to prescribe a sanitary code for the government of such institutions and to revoke licenses for stated causes.

ILLINOIS

Stream Pollution.—A study of the Fox River from Aurora to its mouth at Ottawa has been begun as a part of the state campaign against stream pollution now under way by the Illinois Department of Health. According to plans the improved sanitation of the Fox River will be completed within the next two years.

Tuberculosis Declines in Young Persons.—Evidence that death from tuberculosis is decreasing in persons under 20 years of age is revealed in a survey recently completed by the state department of health. For this age group only fifteen deaths per hundred thousand population were charged against tuberculosis in 1934 as compared with a rate of 50 in 1920. The rate was 71 in 1934 for persons over 20 years of age. The recent study shows a marked reduction in mortality from tuberculosis among persons under 20 since 1920.

Commission for Crippled Children.—The Illinois Commission for Physically Handicapped Children was recently created under a legislative act to obtain and keep a register of physically handicapped children, coordinate all state activities that aim to benefit such children and promote voluntary work in this field. All persons under 21 years of age are regarded as children in the law that created the commission. Mr. Bruce Campbell, East St. Louis, is chairman of the commission, and other members, appointed by the governor, include Dr. Edward L. Compere, Dr. Henry Bascom Thomas, Miss Edna Foley and Mr. Jacob Kepects, Chicago, and Mr. Harry Warner, Dixon. Mr. A. L. Bowen, state director of public welfare, Mr. John A. Wieland, state superintendent of public instruction, and Dr. Frank J. Jirka, state health director, are ex officio members of the commission.

Chicago

Death of Boy from Rabies.—The death from rabies of a boy, 17 years of age, occurred June 15. According to the Chicago *Tribune*, the boy had been bitten by the family dog, May 18.

Personal.—Surg. Gen. Robert U. Patterson, U. S. Army, Washington, D. C., was the guest of honor and principal speaker at the annual dinner of the Medical Chapter of Cook County, Reserve Officers Association, May 24.

Maximum Penalty Imposed on Quack.—Municipal Judge Erwin J. Hasten imposed, May 16, the maximum penalty of one year in the county jail and a $500 fine on Raphael Lee, who had been charged with practicing medicine without a license. Witnesses stated that he sold pills which he declared would cure all illnesses, the Chicago *Tribune* reported. This action is part of a campaign against quacks and fake healers now being conducted by the Illinois State Department of Registration.

Foundation Renews Grant for Biologic Research.—The Rockefeller Foundation will continue for three more years its grant of $50,000 to the Division of Biological Sciences, University of Chicago, for research in biology. The foundation has been aiding this project since 1929 with annual grants of $30,000. Last year, however, the fund was increased to $50,000, the additional money to be used to cover the expenses of the sex research program which had been financed by the committee on research in problems of sex of the National Research Council (THE JOURNAL, Nov. 10, 1934, p. 1458).

IOWA

Tuberculosis Survey.—The Iowa Tuberculosis Association will conduct a survey in Des Moines as a public health professional project of the Federal Emergency Relief Administration. The work will include the investigation of the physical condition of the families and contacts of the 287 persons who have died of tuberculosis in the city during the past five years. This will cover tuberculin testing, physical examinations and x-ray films of all the contacts who give a positive reaction to tuberculin. Modest fees will be paid for this work to members of the society who cooperate.

Twin Lakes District Meeting.—The thirteenth annual assembly of the Twin Lakes District Medical Society will be a diagnostic clinic at Burns' Alhambra Pavilion, Twin Lakes, Rockwell City, June 25. Dr. William M. Shipley, Ottosen, will open the program, and an address by Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, will precede the clinics. His subject will be "Our Changing Times." Physicians presenting clinics will be:

Frederick A. Willius, head of section on cardiology, Mayo Clinic, Rochester, Minn.
Herman L. Kretschmer, Chicago, clinical professor of genito-urinary surgery, Rush Medical College.
LeRoy A. Calkins, professor of obstetrics and gynecology, University of Kansas School of Medicine, Kansas City.
Solon Marx White, professor of medicine, University of Minnesota Medical School, Minneapolis.
Karl A. Meyer, associate professor of surgery, Northwestern University Medical School, Chicago.

The county medical societies of Calhoun, Carroll, Greene, Hamilton, Humboldt, Ida, Sac, Kossuth, Pocahontas, Webster and Wright, forming the Twin Lakes District Medical Society, are affiliated for graduate clinical instruction.

KANSAS

Honorary Membership.—The Sedgwick County Medical Society held a special meeting, April 19, in Wichita, to honor several of its members who had completed fifty years in the practice of medicine. With the inscription, "In recognition of a half century of faithful service to humanity," the specially engraved certificates of honorary membership were presented to the following physicians:

David W. Basham, Wichita
Henry W. West, Yates Center
Horace G. Welsh, Hutchinson
Casius Clay Surber, Independence
Alexander C. Flack, Fredonia
Frank M. Wiley, Fredonia
Frank G. Emerson, Wellington
Theophilus E. Hinshaw, Winfield
John T. Axtell, Newton
R. C. Hutcheson, Elk Falls
Gideon P. Marner, Marion
Solomon T. Shelly, Mulvane
Thomas J. Hollingsworth, South Haven
Powhatan P. Trueheart, Sterling
Eugene Pile, Ashton
John H. Fuller, Wichita
Leighton P. Ravenscroft, Winfield
William F. Walker, Colwich
Robert C. Splawn, Kincaid
Williston H. Addington, Altoona
Wilburn H. Graves, Wichita
L. L. Ames, Wichita

The speaker of the evening was Dr. Andrew B. Rivers, Rochester, Minn., on diagnosis and treatment of peptic ulcer.

MAINE

Society News.—Dr. Seth M. Milliken, New York, discussed "Traction in the Treatment of Fractures" before the Cumberland County Medical Society, April 26.——At a meeting of the Hancock County Medical Society in Ellsworth, April 8, Clarence Cook Little, D.Sc., Bar Harbor, spoke on "Cancer Research."——Dr. Francis M. Rackemann, Boston, among others, addressed the Kennebec County Medical Association at Waterville, April 18, on "Progress in Allergy, Asthma and Eczema."——The York County Medical Society, at a meeting in Kittery, April 3, heard a discussion on birth control by Dr. Edwin W. Gehring, Portland.

MARYLAND

Bequest for Research Laboratory.—Dr. Frank C. Bressler bequeathed $1,000,000 to the Medical School of the University of Maryland to erect and equip a research laboratory. He also provided for a gift of $2,500 to the Medical and Chirurgical Faculty of Maryland, to be known as "The Bressler Fund." Dr. Bressler died May 18.

Personal.—Herbert Spencer Jennings, S.D., professor of zoology, Johns Hopkins University, Baltimore, has been named Eastman professor at Oxford, England, for the academic year 1935-1936.——St. John's College, Annapolis, conferred the honorary degree of doctor of letters on Raymond Pearl, Ph.D., professor of biology, Johns Hopkins University School of Hygiene and Public Health, at its commencement, June 5.——Dr. John M. T. Finney, professor emeritus of surgery, Johns Hopkins University School of Medicine, Baltimore, has been awarded the honorary degree of doctor of laws by Tulane University, New Orleans.

Dr. Eastman Appointed Professor of Obstetrics.—Dr. Nicholson J. Eastman, professor of gynecology and obstetrics at Peiping Union Medical College, has been appointed professor of obstetrics at Johns Hopkins University School of Medicine and obstetrician-in-chief at Johns Hopkins Hospital. He succeeds Dr. J. Whitridge Williams who, until his death in 1931, had held the position since 1899. Dr. John M. Bergland has been acting professor of obstetrics and acting director of the department. Dr. Eastman graduated from the Indiana University School of Medicine in 1921. In 1924 he was named associate in obstetrics and gynecology at Peiping Union Medical College, returning in 1927 to become instructor in obstetrics at Johns Hopkins. In 1929 he was appointed associate, returning to the Peiping staff in 1933.

MASSACHUSETTS

Dr. Mallory Awarded Medal.—The Association of American Physicians conferred the Kober Medal for 1935 on Dr. Frank B. Mallory, emeritus professor of pathology, Harvard Medical School, Boston, at its recent annual meeting in Atlantic City. The medal is provided by the George M. Kober Foundation of Georgetown University School of Medicine, Washington, D. C., which was created in 1923 by the late Dr. George M. Kober, former dean of the school.

Dr. Bock Made Professor of Hygiene.—Dr. Arlie V. Bock, associate professor of medicine, Harvard University Medical School, Boston, has been appointed Oliver professor of hygiene at the school, succeeding Dr. Alfred Worcester, resigned. Dr. Worcester, who has held the professorship since 1925, was entertained by friends at the Harvard Club, April 17. Dr. Roger I. Lee was toastmaster; the speakers included Dr. Dwight O'Hara, Dr. Reginald Fitz and Mr. W. J. Bingham, director of athletics at Harvard. Dr. Bock is an alumnus of Harvard, class of 1915.

Drs. Minot and Murphy Awarded Medals.—The gold medal of the Humane Society of the Commonwealth of Massachusetts has been awarded to Drs. George R. Minot and William P. Murphy, Boston, in recognition of their well known discoveries in the treatment of pernicious anemia. Dr. Charles P. Curtis, president of the society, made the presentation at the Peter Bent Brigham Hospital, May 23. The bestowal of the medal to the physicians marks a change in the policy of the society, which for 150 years has awarded the medal for heroic rescues in which the life of the rescuer was at stake. Dr. Minot is professor of medicine at Harvard Medical School, and Dr. Murphy instructor in medicine. In 1930 they shared the Cameron Prize of the University of Edinburgh, and in 1934 they, with Dr. George H. Whipple, Rochester, N. Y., were awarded the Nobel Prize in Medicine.

MICHIGAN

Hospital News.—A new state tuberculosis sanatorium is to be erected at Gaylord with $250,000 from malt tax funds, in accordance with a law passed by the 1933 legislature. The law provided that the money should be set aside by the state treasurer on March 31, 1935, and construction started immediately. The state department of health has already approved the site.

Veteran Physicians Honored.—The three oldest living alumni of the Detroit College of Medicine were presented with gold badges at a dinner in Detroit, May 11, under the auspices of the Wayne University Alumni Association. Drs. Arthur M. Hume, Owosso, class of 1881, Charles G. Jennings, Detroit, class of 1879, and John A. Wessinger, Ann Arbor, 1882, were the guests of honor. The dinner was held to organize the new alumni association, which sponsored it.

Society News.—Dr. Harry L. Huber, Chicago, discussed "Allergy in Everyday Practice" before the Calhoun County Medical Society, April 1, in Battle Creek.——The annual clinic of the Medical Society of Ingham County was addressed in Lansing, May 16, by Drs. Hugo A. Freund, Detroit, on "Cardiac Irregularities"; Gershom J. Thompson, Rochester, Minn., "Management of Ureteral Calculus"; John Alexander, Ann Arbor, "The Widening Scope of Thoracic Surgery"; Frank E. Whitacre, Chicago, "Forceps," and George W. Crile, Cleveland, "Tumors of the Breast."

MISSISSIPPI

State Medical Election.—Dr. Harvey F. Garrison, Jackson, was named president-elect of the Mississippi State Medical Association at its annual meeting in Biloxi, May 16, and Dr. James R. Hill, Corinth, was installed as president. Greenville was selected as the place for the next annual meeting, May 12-14, 1936.

Society News.—Speakers before the Delta Medical Society in Greenwood, April 10, included Dr. James R. Garber, Birmingham, Ala., on "Infection in Abortion."——At a meeting of the Issaquena-Sharkey-Warren Counties Medical Society in Vicksburg, April 9, Dr. Hugh H. Johnston, Vicksburg, among others, spoke on "Use of Heat in the Treatment of Sinusitis."——The North Mississippi Medical Society was addressed at New Albany, April 17, by Drs. William T. Black, Memphis, Tenn., on "Endocrinology and Its Relation to the Female"; Charles M. Murry, Ripley, "Carbuncles of the Lips and Face," and Conley H. Sanford, Memphis, "Treatment of Pneumonia."——At a meeting of the Pontotoc County Medical Society, April 2, Dr. James M. Hood, Houlka, discussed bacillary dysentery.

NEW YORK

Dr. W. M. Allen Honored.—The Rochester section of the American Chemical Society sponsored a dinner in honor of Dr. Willard M. Allen, assistant in obstetrics and gynecology, University of Rochester School of Medicine and Dentistry, Rochester, at the University Club, May 16, in recognition of his work on the corpus luteum which resulted in the isolation of "Progestin." Among the speakers were Prof. John Ernest Lansing, head of the chemistry department at Hobart College, Geneva; Walter R. Bloor, Ph.D., professor of biochemistry and pharmacology and associate dean of the University of Rochester School of Medicine and Dentistry; Murray Bartlett, D.D., president, Hobart College, Geneva, and Dr. George W. Corner, professor of anatomy at the medical school, with whom Dr. Allen collaborated in his research work. Dr. Allen's discovery recently won for him the award of $1,000 by Eli Lilly and Company for outstanding work in biochemistry.

New York City

Drs. Globus and Silverstone Awarded Medal.—Dr. Joseph H. Globus, associate neurologist, Mount Sinai Hospital, and his associate, Dr. Sidney M. Silverstone, a member of the house staff, have been awarded the Lucian Howe Medal in Ophthalmology for their work on the diagnostic value of visual field defects and other ocular disturbances in supratentorial brain tumors. Dr. Globus is also associate professor of neuro-anatomy and neuropathology at New York University, University and Bellevue Hospital Medical College. The prize is awarded by the Medical Society of the State of New York.

Society News.—Dr. Paul K. Sauer addressed the New York Surgical Society, April 24, on "Carcinoma Following Gastric and Duodenal Ulcer."——Drs. Joseph W. Larimore, St. Louis, and Moses Paulson, Baltimore, addressed the National Society for the Advancement of Gastro-Enterology, April 24, on "The Significance of Gastritis" and "So-Called Nonspecific Ulcerative Colitis," respectively.——Dr. James C. Healy, Boston, discussed "Allergy and Endocrinopathy: Their Medico-Dental Relationships" before the American Stomatological Association, May 27.——The East New York Medical Society celebrated its twenty-fifth anniversary, recently, with a dinner at which all twenty-five past presidents were present. Dr. Samuel L. Siegler was toastmaster. Speakers included Drs. Harry Apfel, first president, who reviewed the society's history and John Sturdivant Read.——Dr. Lionel S. Auster presented a paper on "Tumors of the Male Breast," with analysis of fifty cases, before the surgical section of the New York Academy of Medicine, May 3.

Dr. Flexner to Retire from Rockefeller Institute.—Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute for Medical Research since the opening of the institute in 1903, has presented his resignation to take effect on the appointment of his successor. Dr. Flexner is 72 years of age. He graduated from the University of Louisville (Ky.) School of Medicine. From 1895 to 1898 he was associate professor of pathology at Johns Hopkins University School of Medicine, where for the year ended 1899 he was professor of pathologic anatomy. Following four years as professor of pathology at the University of Pennsylvania School of Medicine, he was named director of laboratories of the Rockefeller Institute for Medical Research. Dr. Flexner has contributed extensively to the literature on bacteriology and pathology, especially on epidemic cerebrospinal meningitis and its serum treatment; poliomyelitis, its cause and mode of transmission, and epidemic encephalitis. He, with his collaborators, was the first to use the meningococcus antitoxin. He was chairman of the U. S. Plague Commission in 1900, a lieutenant colonel in the medical corps of the U. S. Army from 1917, and in 1919 became a colonel and assistant surgeon general of the U. S. Public Health Service. In 1923 he was chairman of the Public Health Council of New York.

OHIO

Personal.—Dr. Edgar R. Hiatt, Troy, was chosen president of the Ohio Public Health Association at its annual meeting in Columbus.

Student Prizes.—The senior prize in surgery at Western Reserve University School of Medicine, Cleveland, was presented to Carl Bernard Lechner, Erie, Pa. It consists of books and surgical papers of the late Dr. William Stewart Halsted, professor of surgery, Johns Hopkins University School of Medicine, Baltimore, and is the annual gift of Dr. Elliott C. Cutler, Boston, formerly professor of surgery at Western Reserve. The senior prize in obstetrics was awarded to Edwin Alonzo Lawrence, Norwalk. The prize is the income from a fund given by Dr. Edwin C. Garvin, a graduate of Western Reserve, class of 1894.

PENNSYLVANIA

Personal.—Charles Nelson Fry, Harrisburg, an investigator for the state board of medical licensure since 1926, died April 16. ——Dr. John L. Mansuy, Ralston, has been appointed health officer of Lycoming County.

Physicians Stage Show to Help Hospital.—Members of the McKeesport Academy of Medicine presented "Ye Doctors Minstrels" at the Memorial Theater, McKeesport, May 29. The proceeds of $2,000 have been turned over to the McKeesport Hospital, to be used for repairs.

Bill Passed.—S. 1528 has passed the senate, proposing to amend the laws regulating the practice of osteopathy by prohibiting an osteopath from using the title "Doctor" or the abbreviation "Dr." before his name without the word "Osteopath" or "Osteopathist" or the words "Osteopathic Physician" immediately following his name.

Bequest for New Hospital.—A fund of about $600,000 was recently made available to the University of Pennsylvania from the estate of the late Baroness Margaret Dulles Fontana of Philadelphia. It will be used to build a maternity hospital, which will be named the William Crothers Dulles Hospital in memory of the donor's brother, who lost his life on the *Titanic*.

Philadelphia

Society News.—Papers were presented before the Philadelphia Urological Society, May 27, among others, by Drs. Walter E. Daniel on "Stricture of Urethra in Female" and Collier F. Martin, "Lymphopathia Venerea vs. Rectal Stricture."——Dr. Francis Ashley Faught was chosen president-elect of the Philadelphia County Medical Society at its semiannual business meeting, May 15.

Memorial to Dr. Jarecki.—Funds are being solicited to create the Edwin A. Jarecki Memorial Research Fund, in honor of the late chief resident physician at the Jewish Hospital, Dr. Edwin A. Jarecki. The care and disposition of the fund will be in the hands of a board of trustees, consisting of two members each from the board of directors, the medical staff and the ex-residents' association. From time to time the interest will be used as grants to qualified members of the medical staff and ex-resident physicians, to investigate approved scientific research problems. Checks made payable to "The Edwin A. Jarecki Memorial Fund" should be sent to Mr. Alfred Mayer, administrator, Jewish Hospital.

VIRGINIA

Portrait Unveiled.—A portrait of the late Dr. G. Paul La Roque, professor and head of the department of clinical surgery, Medical College of Virginia, was unveiled at the school, May 28, by Laura May Wood, grandniece of Mrs. La Roque. Dr. La Roque died in 1934.

Child Conservation Committee.—A number of child hygiene and child welfare committees of state organizations met in Richmond, April 3, to form the State Child Conservation Committee. The agencies represented in the new group and their chairmen follow:

Medical Society of Virginia, Dr. Waddie P. Jackson, Roanoke.
Virginia Tuberculosis Association, Dr. Dean B. Cole, Richmond.
Virginia Pediatric Society, Dr. James B. Stone, Richmond.
Cooperative Education Association, Virginia Parents and Teachers, Miss Ellen H. Smith.
Virginia Education Association, Mr. J. M. Shue.
State Superintendents' Association, Mr. W. A. Scarborough.

Changes in Health Officers.—Dr. Jack B. Porterfield has been appointed health officer of Montgomery County with headquarters at Christiansburg. Dr. Linwood Farley, Courtland, has been named assistant to Dr. Edgar C. Harper, Richmond, deputy director of rural health in the Southwest Health District, with headquarters at Abingdon. Dr. George E. Waters, formerly of Blackstone, has been appointed acting director of the Peninsula Health District, effective May 6. He succeeds Dr. Charles H. Dawson, Suffolk, resigned. The district includes the counties of James City, Elizabeth City, Warwick and York, with headquarters at Williamsburg.

Society News.—At a meeting of the Postgraduate Medical Society of Southern Virginia and the department of clinical education of the Medical Society of Virginia at Surry, May 7, speakers included Drs. Hyman Cantor, Petersburg, on "Acute Perforation of Gastric Ulcer"; Rufus L. Raiford, Franklin, "Use of Plaster Splints in Treating Fractures," and Andrew Stephens Graham, Richmond, "The Colon."——Dr. W. Ambrose McGee, Richmond, discussed feeding problems of children before the Southampton County Medical Association recently. ——The Roanoke Academy of Medicine was addressed, April 29, among others, by Drs. William L. Powell and Linwood D. Keyser on "Polyorchidism with Malignancy in the Supernumerary Testicle."

WYOMING

Personal.—Dr. Harold E. Haymond has been appointed superintedent of the Midwest Hospital, Midwest, succeeding Dr. Wilber Hart.

Dr. Anderson Named State Health Officer.—*Colorado Medicine* announces that Dr. George M. Anderson, Cheyenne, has taken over the duties of state health officer, secretary of the state board of health and acting secretary of the state board of medical examiners, succeeding Dr. Walter H. Hassed, Cheyenne. Dr. Anderson held the position prior to Dr. Hassed's appointment in 1928.

GENERAL

Grants of National Research Council.—The Division of Medical Sciences of the National Research Council will hold a special meeting next November to consider applications for grants in this field. Applications to be considered at this meeting must be on file with the secretary of the committee, Dr. Clarence J. West, 2101 Constitution Avenue, Washington, D. C., not later than Oct. 1, 1935. Applications received after October 1 and prior to Feb. 15, 1936, will be acted on at the next regular meeting of the committee on grants-in-aid in March 1936.

Association for the Advancement of Science.—The ninety-sixth meeting of the American Association for the Advancement of Science will be held in Minneapolis, June 24-29. At this meeting, special joint sessions have been arranged with the Minnesota State Medical Association, the first of which will be held Monday evening, June 24, with Dr. William P. Murphy, Boston, as the speaker. Joint sessions of the Section on Medical Sciences and the medical society have been arranged for Monday and Tuesday mornings. According to a preliminary program, speakers will include:

Dr. Adolph M. Hanson, Faribault, Minn., Biological Effect of Thymus and Pineal Extracts.
Dr. Max Cutler, Chicago, Recent Advances in the Treatment of Cancer.
Dr. Elmer L. Sevringhaus, Madison, Wis., Endocrine Therapy.
Dr. Everett D. Plass, Iowa City, Simplification of Obstetrical Care.

In addition, there will be various exhibits concerning cancer, prevention of deafness, mental health, physical therapy, tuberculosis and the endocrines, including one on diabetes mellitus.

Twenty-One Broadcasting Stations Cited to Appear.—Because they carried the advertising of a medical preparation which other agencies of the federal government consider improper for use, twenty-one broadcasting stations must appear at a hearing of the federal communications commission, October 3, and show cause why their licenses should not be revoked for failure to operate in the public interest. This action is part of the campaign against radio advertising which has just been launched by the federal communications commission, newspapers announced, May 23. In response to questions by broadcasters and advertisers, most of which concerned medical products, the commission stated:

> This question is one which essentially does not concern the commission as the sole responsibility of operating its station in the public interest and according to law is upon the station licensee. If a station licensee is not prudent and intelligent enough to find its sources of information to properly guide it, then it is not properly qualified to operate a station in the public interest and according to law.

Station licenses are granted for only six months, and on every application for renewal the commission determines whether or not the station is operating in the public interest. While the commission is concentrating now on drug preparations which it considers improper, it probably will extend the drive to other types of programs which it believes "not in the public interest." The twenty-one stations cited are all charged with advertising a reducing preparation which the food and drug administration, federal trade commission and post office department have condemned and tried to put out of business but which, in one way or another, has evaded other federal laws.

Government Services

Federal Narcotic Farm Dedicated

The first United States Narcotic Farm, near Lexington, Ky., was dedicated, May 25. Surg. Gen. Hugh S. Cumming, U. S. Public Health Service, gave the address. Accommodating a maximum of 1,000 persons, the narcotic farm is designed for males only. Its objects and purposes are to rehabilitate, restore to health and train to be self supporting and self reliant those who are admitted. In addition, experiments will be carried on to determine the best methods of research and treatment in this field with the ultimate view that states may adopt some similar means to help solve the problem of drug addiction. According to the New York *Times*, four classes of narcotic addicts are to be received: Those convicted of violating federal laws, convicted persons who have completed their prison sentences; offenders on probation and voluntary patients. The plant, which required three years to build, at a cost of $4,000,000, occupies eleven acres in the middle of a rich farm area. Staffed by 350 employees, upkeep of the farm is estimated at $750,000 a year. A similar institution is now being erected at Fort Worth, Texas (THE JOURNAL, February 16, p. 574).

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 25, 1935.

The Centenary of Hugh Owen Thomas

The centenary of the birth of Hugh Owen Thomas has been celebrated by the publication of a study by Mr. Frederick Watson, son-in-law of Sir Robert Jones. The *Liverpool Medico-Chirurgical Journal* has now produced a centenary number containing a brilliant centenary lecture by Mr. T. P. McMurray, director of orthopedics, Liverpool University. This journal is the organ of the Liverpool Medical Institution, of which Thomas was a member. With the exception of Keith's chapter, "Menders of the Maimed," McMurray's lecture is the first adequate recognition in this country of the genius of the man who laid the foundation of the modern treatment of bone and joint lesions and on whose work is based the structure of orthopedic surgery. Descended from a line of Welsh bone setters, he saw in his father's house many cases of joint disease treated with apparent success. When a medical student at Edinburgh and London, he was convinced that the wholesale amputations then in vogue were unnecessary. He began practice in Liverpool in 1859, and became medical officer to many workmen's clubs—shipwrights, iron workers, boiler makers—which gave him great experience in bone and joint injuries. By his sagacity and mechanical genius he was able to cope with problems which then seemed insoluble. He had his own workshop, where he made with his own hands the splints which have immortalized his name. For thirty years he practiced at high pressure, mainly among the working classes, treating by his own methods all sorts of bone and joint injuries and diseases. His epoch-making advances were ignored by the orthopedic surgeons of the day, and when he died in 1891 the obituaries in the medical journals showed no recognition of the greatness of the man.

It was toward the end of his life, in 1887, that Dr. John Ridlon arrived. Their dramatic meeting and the ignoring of Thomas's teaching that Ridlon found in England have been described (THE JOURNAL, March 23, p. 1018). Although Ridlon was not the first to discover Thomas, he was the first American to do so, and he is now the only living orthopedic surgeon who knew him. There is no more eloquent tribute than Ridlon's, which Mr. McMurray quotes: "Thomas did more good new things for orthopedic surgery than all the rest from Hippocrates down to this day. Today he is known for his leg splint and not for the principles which he laid down, but he was the greatest man in orthopedic surgery for all time." Yet now, more than 40 years after his death, his greatness is far from generally appreciated in England, and outside Liverpool the centenary is almost unnoticed!

When Dr. Ridlon visited the clinics of the orthopedic surgeons he found that not one of them had a good word to say of Thomas, though comparison of their work with his showed that "one could gain more useful knowledge following Thomas around for an hour than elsewhere in Great Britain for months." This neglect can be explained. His bone-setting ancestry aroused prejudice, and he had no hospital appointment, a thing generally regarded as essential for surgical status. Moreover, he reveled in polemics, was no respecter of persons and treated the errors of those in high places with the scorn that was deserved.

Years before Dr. Ridlon came on the scene another meeting of great importance for Thomas's reputation occurred. In 1875 he had under his care a police inspector for compound fracture of the tibia. The limb was fixed in his splint and the whole

apparatus slung on a crane, so as to allow movement of the patient without interfering with the fracture. Dr. E. Parker, the police surgeon of Liverpool, was instructed to examine the man and brought with him his son Rushton Parker, who had lately come to Liverpool from University College, London, where he was a favorite pupil of Erichsen. He later became professor of surgery in the University of Liverpool. Thomas showed them all the details of his treatment and they at once realized that here indeed was a master. He then took Rushton Parker to his private hospital and showed him several cases of diseased joints that he was treating by his new method of prolonged rest. The meeting led to a life-long friendship. Parker immediately became an enthusiastic disciple, introducing Thomas's methods to the various hospitals to which he was attached, and never lost an opportunity of stimulating the interest of the profession in Thomas's work. He also urged Thomas to publish his methods, as otherwise they would soon be claimed by others. Hence in the same year appeared "Diseases of the Hip, Knee and Ankle Joints," which twelve years later brought Dr. Ridlon to Thomas. Thus the credit of discovering Thomas belongs to the later Prof. Rushton Parker. In the 1885 edition of Erichsen's "Surgery," the leading textbook of the day, Thomas's methods receive due recognition. This exception to the general neglect can be explained by Parker's connection with Erichsen. Another leading surgical author, Thomas Bryant of Guy's Hospital, also recognized his work. But otherwise up to his death in 1891 his teaching was largely ignored. Then his nephew and pupil, Sir Robert Jones, who had the advantage of hospital appointments, built on the foundations laid by Thomas and convinced the surgeons of the world of the value of his principles.

What was the kernel of Thomas's doctrine which revolutionized orthopedic surgery? He wrote: "Most of our surgery is too mechanical, our medical practice too chemical, and there is a hankering to interfere, which thwarts the inherent tendency to recovery." He held that the surgeon could give aid by giving rest. But the surgeons of his day did not understand how to give rest. Their methods of immobilization were inferior to his and produced injurious compression of the diseased parts. He secured complete immobilization and at the same time avoided all pressure on the diseased parts. His splints are equally serviceable in the treatment of fractures. In his book on fractures, Major Meurice Sinclair described Thomas's splints as "the greatest advance in the treatment of fractures in modern times" and as "instruments so perfect that all modifications do but reduce their efficacy." Their use on the battlefield for the immobilization of gunshot fractures of the femur were taught again by Jones and Sinclair and greatly reduced the high mortality.

The British Postgraduate Medical School

London has no fewer than twelve undergraduate medical schools, each with its own large general hospital, other general voluntary hospitals, several hospitals devoted to specialties, and finally the municipal hospitals, now controlled by the county council, which contain 30,000 beds. The hospitals that are medical schools are preoccupied with undergraduate teaching. This is unfortunate, because it is in them that the most famous teachers work. Two general hospitals are devoted to postgraduate teaching, which otherwise is organized by the Postgraduate Medical Association in a few general hospitals and a large number of special hospitals scattered over London. The want of a central school for postgraduate teaching has long been felt, and its formation has been described in previous letters. It was a great undertaking, accomplished by the financial cooperation of the University of London, the government and the London County Council. The last has adapted for the purpose one of its municipal hospitals, the Hammersmith Hospital. The school has been normally opened by the king. Addressing him, Sir Austen Chamberlain, chairman of the governing body, said that the school had three great tasks: (1) to enable physicians in general practice to learn the latest development in diagnosis and treatment; (2) to provide instruction for graduates desiring to pursue special studies, and (3) to advance medical knowledge. Their ambition was to make the school a great imperial center of British medical science, drawing teachers and students from all parts of the dominions.

Child Guidance

The Child Guidance Council was established to encourage skilled treatment for children showing behavior disturbances and early symptoms of nervous disorder. The council maintains contact between the various clinics throughout the country and arranges the interchange of information and discussion, so that the greatest values may be gained from variety of experience. The work has been made possible by the Commonwealth Fund of America, which has financed the undertaking since its inception and which has for many years been financing similar clinics in the United States. At the annual general meeting of the council Dr. William Moodie, general secretary, said that the demands of the clinics were increasing, in consequence of the increasing realization that mental disorder of all kinds manifested itself in childhood as a primitive thing, and a thing which grew and developed until the adult was afflicted. In thirteen clinics in England and Scotland last year 3,800 cases were treated and about one half did well. Mr. Barry C. Smith, general director of the Commonwealth Fund, said that it was a great satisfaction to say that they had received an adequate return for their investment. If an amalgamation between the Child Guidance Clinic and the National Council for Mental Hygiene were effected, he would recommend a grant of $25,000 a year for five years.

Maternal Mortality

The failure to diminish the maternal mortality has led some authorities to suggest that the practice of obstetrics should be under the direction of specialists and not of general practitioners. In the *Lancet*, Mr. Fardley Holland, obstetric and gynecologic surgeon at London Hospital, states that a striking change in the last fifteen or twenty years is the widening of the indications for intervention during labor. This has occurred in spite of the efforts to prevent it by teachers and textbooks. He considers that the factors which have led to this are (1) the increasing use of analgesics and anesthetics and the building of hundreds of small hospitals where local practitioners, who may have neither the requisite judgment nor skill, have the opportunity to perform cesarean sections and other obstetric operations. The former have increased in an astonishing manner. He quotes a government report on maternal mortality in which it is suggested "that in some cases there may be a tendency to resort to cesarean section without due consideration of other methods." The manufacturing town of Rochdale in Lancashire has a maternal mortality of 10 per thousand. An investigation by the health officer suggested that a large proportion of the deaths was due to too frequent intervention. A movement of reform was set on foot in which the physicians willingly joined. The women were taught to make the fullest use of antepartum clinics. The result was remarkable: the mortality at once fell to 3.9, which is about the average for the country generally. Mr. Holland advocates postgraduate training in obstetrics for those who intend to practice this branch.

At the National Conference of Labor Women a resolution was passed urging the Ministry of Health to continue inquiry into maternal deaths and to institute inquiry into maternal morbidity, the adequacy of obstetric training, and the relation of nutrition to healthy pregnancy and healthy motherhood.

The Epidemic of Malaria in Ceylon

The malaria epidemic in Ceylon has been described in previous letters. The total deaths in the four months November-February amounted to 54,000. Lieut.-Col. C. A. Gill, who has made a special study of epidemics as director of public health in the Punjab, was selected to direct the campaign against malaria in Ceylon, for which the state council has set aside $1,000,000. He has now arrived and states that with the exception of the malaria epidemic in Mauritius in 1867 he has never heard of an epidemic of the magnitude of that in Ceylon.

Professional Secrecy and Police Investigation

Some discussion has arisen as to the information a physician should give when questioned by the police in the investigation of crime. On the one hand it is argued that the physician as a citizen has obligations to prevent the commission of crime or to help in the discovery of criminals, while on the other hand his obligation of professional secrecy is urged. Because of inquiries recently made in connection with a crime by the chief constable of Hove, the local division of the British Medical Association applied for advice. The chairman of the Central Ethical Committee sent the following considered statement, which has received the approval of the council of the association: "A request by the police to a member of the medical profession to give the names and addresses of any patients who had consulted him for symptoms particularized by the police ought to be declined, on the ground that to accede to such a request would be a gross breach of professional confidence and might involve him in an action for damages by the patient or patients concerned."

Making Roads Safe for Children

A committee on road safety for school children has been appointed by the government. In the evidence submitted was a memorandum of the Pedestrians' Association, which pointed out that the problem of the reduction of accidents to children could not be considered apart from the general one of road danger. In rural districts the dangers to children occurred mostly when they were walking along roads unprovided with footpaths. These should be provided on the roads used by rural children in going to school. In urban districts most children were killed in going to or coming from school, parks and recreation grounds, and in playing in the streets where no parks or playing grounds were available. No mechanical means of safeguarding pedestrians across roads inspired the same confidence or provided the same safety for children as was afforded by policemen. Therefore traffic duty men should be furnished during the hours of school going and leaving at points where children had to cross main roads. Parents must recognize their direct responsibility for the safety of children up to the age of 3. But the prime responsibility for their safety lay with the motorist, who should drive with a sufficient reserve of control to avoid most of the accidents due to the actions of children.

Two headmasters also gave evidence. They emphasized the need for work in the cultivation of road sense, for the use of street plans marked out in hall or playground, and for practice in road crossing with toy vehicles to represent traffic. Elder children could be instructed in the highway code by simple dramatization of the work of drivers, whose point of view they should be made to see. Drivers might assume that adults possessed road sense, but they had no right to assume that children did.

THE SAFETY OF CYCLISTS

The Cyclist Touring Club presented a memorandum stating that the problem of the safety of cyclists as a whole might be approached from the standpoints of the provision of separate tracks for the voluntary or compulsory use of cyclists, the exclusion of cyclists from certain roads, and stringent precautions to ensure the safety of all road users. The club maintained that the provision of cycle tracks would not be an effective remedy. The exclusion of cyclists from busy streets would probably prevent school children from riding to school except in country districts. Whatever the circumstances in which child cyclists met their deaths, the remedy was training in the wise use of roads and stringent measures against drivers who endangered the lives of others.

The Prevalence of Dental Disease

Civilization and a healthy set of teeth seem to have become incompatible. New headquarters of the British Dental Association have been opened by Mr. Geoffrey Hithersay Shakespeare, parliamentary secretary to the ministry of health. He said that in the last twenty or thirty years science had recognized the vital connection between dentistry and the health of the nation. An effort was being made to see that the care of the teeth and mouth played its proper part in the life of the individual from the earliest stages. Examinations started in the maternity and child welfare centers and went on to the school medical service. Out of some 3,000,000 children examined last year, 60 per cent were defective in teeth and needed treatment. There was then a bad gap, for the adolescent received no treatment from the state and often failed to obtain any. Then came national health insurance. Since 1921, when dental treatment became an additional benefit, $100,000,000 had been spent by the lodges in dental treatment. As the financial resources of the country improved, he had no doubt that the dental service would be enlarged. He then opened the Robert Lindsay Library, which is claimed to be as good as any dental library in the world.

PARIS

(From Our Regular Correspondent)

May 10, 1935.

Why Tuberculosis Prophylaxis Is Sometimes Unsuccessful

Lesne and Dreyfus-See, in a paper read at the April 9 meeting of the Academy of Medicine, state that not infrequently tuberculosis is found in school children in whose families one fails to find any source of infection. A survey of possible loopholes through which children may be infected in the school itself reveals the fact that an inspection must be thorough enough to include the teachers and other personnel of every educational institution. In Paris, teachers are subjected to examination only when they are applicants. In the suburban territory around Paris, such an examination is seldom carried out. To protect school children from possible sources of infection in the form of tuberculous teachers and other personnel, the suggestion is made that the examination of the latter should be obligatory at regular intervals. Furthermore, a systematic search for tuberculosis must be extended to crèches, which has not been the case in the past. Both infants and nursing personnel must be subjected to routine examinations in such crèches.

Lymphatism in Infancy

In the July 1934 issue of *Le nourrison,* Professor Marfan of Paris defines lymphatism as a clinical entity occurring during infancy and characterized by a more or less generalized persistent hyperplasia of the lymph nodes and lymphoid tissues. It is due to the nonspecific reactions in organs and tissues following the majority of prolonged infections and intoxications. It manifests itself by a polyadenitis involving most commonly the cervical, axillary and inguinal, less frequently those of the occipital, thoracic, subaxillary and epitrochlear lymph nodes. This polyadenitis is often accompanied by a slight anemia. In

some cases there is, in addition, a hypertrophy of the tonsils and pharyngeal lymphoid tissue, less often an enlargement of the spleen and thymus in children below the age of 3 years. In 85 per cent the polyadenitis is associated with rachitic (bony) deformities, which has led some pediatricians to term the condition an "osteolymphatism." At necropsy it is not uncommon to find enlarged mediastinal and mesenteric lymph nodes, as well as a hyperplasia of the intestinal lymphoid tissue. Microscopically, one finds in the lymph nodes a cellular and fibrous hyperplasia in variable proportions.

The appearance of these infants is inconstant, some being poorly and others well nourished.

One can divide the cases from the etiologic standpoint into three groups: those in which there has been a mild or severe infection of long standing, those in which there is a dystrophy of alimentary origin and those in which there are persistent digestive disturbances. The result is a generalized reaction of the lymphatic system. Lymphatism is neither the primary manifestation of "scrofulotuberculosis" or of tuberculosis but is a symptom complex seen only in infancy, which in itself is of no consequence but, when present, should lead to a search for the cause. When the polyadenitis is accompanied by bilateral epitrochlear adenitis, one should look for syphilis, tuberculosis or kala-azar. Chronic splenomegaly associated with polyadenitis should lead one to think especially of syphilis, in northern climates, if such a combination occurs during the first four or five months of life.

The treatment of lymphatism depends on the cause. In addition, one should study the diet of the infant, prescribe an open air life and prescribe heliotherapy or ultraviolet treatments.

Rôle of Vasomotor Nerves in Embolic Pulmonary Infarcts

At the April 6 meeting of the Société de biologie, the results of a series of experiments were reported by Delarue, Justin-Besançon and Bardin. The histologic evolution of experimental lesions, from the period of onset of the embolism up to that of cicatrization of the resultant hemorrhagic infarction of the lung, were studied. Their observations prove that the hemorrhagic infiltration of the pulmonary parenchyma is the result of a sudden well localized dilatation of the capillaries with subsequent thickening of the interalveolar septums and a serohemorrhagic exudate into the alveoli themselves. This is the typical finding in animals killed immediately after experimental embolism. A quarter of an hour later, one already finds foci of infarction. At the end of from twenty-four to forty-eight hours the picture is that of a typical infarct, which becomes more and more marked in animals killed from seven to fifteen days after the embolism. One finds the same early changes in animals following unilateral section of the vagus in the carotid region or after unilateral chemical stimulation of the trunk of the cervical sympathetic as after experimental embolic occlusion of the pulmonary vessels.

Pleuropulmonary Embolic Form of Myocardial Infarct

An unusual primary clinical manifestation in a case of infarct of the myocardium was reported at the March 29 meeting of the Société médicale des hôpitaux: A man, aged 57, was admitted complaining of dyspnea and a bloody expectoration. The blood pressure two years previously had been found to be 250 mm. of mercury. On two occasions during the interval, marked but transitory dyspnea was noted. Three days before admission, bloody expectoration and severe nonradiating pain over the front of the chest began suddenly. The examination on admission revealed the presence of a pulmonary infarct. The cardiac examination revealed only a regular tachycardia, a gallop rhythm and an accentuation of the second sound at the base. No friction sound or murmur could be found. About fourteen days later, after a temporary improvement, a marked tachycardia appeared, accompanied by a recurrence of pulmonary infarct symptoms. Death occurred suddenly about four weeks after admission.

The necropsy revealed a bilateral pleural effusion, numerous areas of pulmonary infarcts, absence of any lesions in the pulmonary vessels, an adhesive pericarditis and an extensive relatively recent infarct of the myocardium involving the wall of the right ventricle close to the apex. The latter localization of an infarct can be considered as comparatively rare. None of the characteristic signs of an occlusion of the coronary arteries, such as severe angina and a drop in blood pressure, had been present. The main features of the clinical picture had been those of pleuropulmonary infarcts not due to any embolic process.

Paroxysmal Hypertension

The Nov. 16 and 23, 1934, meetings of the Société médicale des hôpitaux de Paris were devoted to a symposium on paroxysmal hypertension. Abstracts of some of the papers was given in a previous letter. The remainder were of equal interest and are taken up here.

Villaret and associates stated that such a paroxysmal rise of blood pressure is simply a sudden alteration of the physiologic mechanism which regulates, under normal conditions, the equilibrium of arterial tension. This sudden rise is the result of the nervous regulatory apparatus that controls vasoconstriction and epinephrine secretion, being subjected to abnormal stimulation.

Monier-Vinard reported a case in which the blood pressure rose to 270 mm. of mercury after the drinking of large quantities of wine and would drop to normal as soon as the patient was abstinent.

De Gennes observed a sudden rise to 300 mm. of mercury during a hemorrhage into the bulbar region of the brain.

Laubry and Bernal have noted that during the attacks of paroxysmal hypertension there are usually accompanying renal symptoms (albuminuria, polyuria, casts and, at times, hematuria). They disappear unless the hypertension becomes a permanent one. Necropsy in these cases of paroxysmal hypertension reveals only minimal changes in the renal parenchyma.

Rathery believes that in hypertension the renal changes are secondary, yet the existence of a primary hypertension is not cleared up. There are certain cases of permanent as well as paroxysmal hypertension that are not of renal origin, but on the other hand, there are others with such an origin.

Tzanck divides the cases of paroxysmal hypertension into three groups, so far as their etiology is concerned. Those due to epinephrine, those due to an adrenal neoplasm and those in which various substances such as are used for chemotherapy or proteins give rise to paroxysmal hypertension. One sees reactions similar to paroxysmal hypertension, such as pain, dyspnea, collapse and paroxysmal tachycardia, in anaphylaxis, shock, allergy, intolerance and idiosyncrasy.

Opening of the Gilbert Dispensary for Physical Therapy

The department of physical therapy at the Hôtel Dieu, one of the oldest and largest hospitals of Paris, had grown to such an extent since the World War that larger quarters became necessary. A new building has been constructed on the grounds of the Hospital. It has been named the Gilbert Dispensary in commemoration of the services rendered by the late Professor Gilbert in developing the application of physical therapy to medical and surgical ailments. The new quarters were opened February 25, in the presence of the minister of public health and other officials. The service is equipped with every known

apparatus for physical therapy. In 1934 more than 300 treatments were given in the old quarters, and this number will be greatly augmented when the more adequate facilities offered by the new building come to be utilized. The services include those for radiotherapy, electrotherapy, kinesitherapy, hydrotherapy and mechanotherapy. The new building is well worth a visit by those interested in physical therapy.

Three Cases of Gangrenous Erysipelas

Lemierre, Brocard and Pham reported three cases of gangrenous erysipelas at the February 22 meeting of the Société médicale des hôpitaux. In two patients the erysipelas involved the lower portion of the thigh, the skin presenting also large phlyctenules. Gangrene occurred on the fifteenth and sixth days respectively of the disease. One of these terminated fatally but, in the other, recovery occurred after extensive involvement of the skin and subcutaneous tissues. In the third case the foot was the seat of the infection, which was accompanied by an extensive gangrene. In the first two cases, cultures revealed the presence of an anaerobic bacillus associated in large numbers with the streptococcus. In the third case there was a large number of streptococci and Staphylococcus aureus. The authors believe that this association of organisms is responsible for the gangrene. Examination of the blood failed to reveal a hyperglycemia. Hemocultures were constantly negative. In the fatal case an erysipelas of the face and an alcoholic cirrhosis were undoubtedly the complications that determined the outcome. The only treatment consisted in applications of potassium permanganate solution. The prognosis is, as a rule, not an unfavorable one and should be borne in mind before an amputation is considered.

BERLIN

(From Our Regular Correspondent)

April 15, 1935.

Congress of Internal Medicine

The Deutsche Gesellschaft für Innere Medizin convened this year in Wiesbaden March 25-28, under the chairmanship of Professor Schottmüller of Hamburg, who, in his address concerning the medical training of the next generation, demanded that a large portion of the practical training of physicians should be in the field of internal medicine. Dr. Wagner, the federal *fuehrer* of the physicians, emphasized that the new German medicine must be built up on the basis of the national-socialist world views. A bridge must be erected between the knowledge of the old school of medicine and the nature cure methods. The extreme views of both camps must be suppressed.

The first day was devoted to the questions of aeronautic medicine. Schubert of Prague considered the problems of flying at high altitudes on the basis of his own observations. Flying, at heights of from 10,000 to 11,000 meters, is exceedingly trying on the mind and nerves. In addition, respiration and circulation are overburdened by the atmospheric conditions, radiations, lowered oxygen tension, and other factors. It should be adopted as a principle that, from 4,000 meters on, artificial oxygen should be administered. Modern airplanes especially adapted for flying at high altitudes require great elasticity of the circulation. Only aviators from 20 to 30 years of age should be selected for high flying. In record flights to altitudes up to 14,000 meters, the capacity for action and reaction, even with the use of artificial oxygen, is so limited that the aviator is unable at such heights to make quick decisions, which is essential. An altitude of 10,000 meters must be regarded, therefore, as the upper limit of safety. The addition of carbon dioxide to oxygen, as proposed, for example, by the French (2 per cent) and by the Italians (8 per cent), rests, according to Schubert, on an erroneous theory and, from a practical point of view, is unnecessary.

Diringshofen of Berlin spoke, with especial consideration of the effects of acceleration, on the basis of his own observations in flying at high altitudes. In addition to the effects mentioned by Schubert, attention should be given to the expansion of the intestinal gases, which, under certain circumstances, may lead to upward displacement of the diaphragm. At an altitude of only 1,000 meters, the increase of the volume is 12 per cent; at 5,000 meters 100 per cent, and at 10,000 meters 400 per cent. Since the total amount of intestinal gas may be assumed to be normally no more than 1 liter, the increased volume in ordinary flights offers no danger. Air sickness is of labyrinthine origin and is identical with seasickness. Other injuries, caused by breathing oil vapors and exhaust gases, may be overcome by technical refinements. Great importance attaches to the effects of rapid accelerations. In precipitate descents and in the rounding of curves, forces act on the body that may be equal to five times the body weight, and serious disturbances can be avoided only if the pressure is applied but a few seconds —ten at the most; otherwise disturbances, particularly of vision, together with loss of consciousness, are likely to occur. The pressure on the circulation from without must be compensated for by a timely increase of the blood pressure, if disturbances are to be avoided. Thus, voluntary increases in the blood pressure can be effected by increasing the abdominal muscular pressure, or by bending the body forward, whereby the difference between the height of the heart and the height of the head is lessened; also by the intensive application of will power and keeping up uniform breathing. In this manner it is possible to endure strong accelerations for several seconds without any disturbance. In flying on one's back the conditions are reversed; in this position injuries to health are caused by venous stasis (retinal hemorrhages; also cerebral hemorrhages).

In the aptitude for flying, as Lottig of Hamburg pointed out, the whole personality plays an important part. A mechanistic estimation should be avoided. A slight acceleration of pulse or the like does not constitute a detraction from the fitness of an aviator. The flight surgeon who decides on the fitness of candidates should be a good aviator himself. For flying at high altitudes, candidates, as Hartmann of Berlin pointed out on the basis of the observations of the Himalaya Expedition, in 1931, should be trained gradually in subpressure chambers.

In sport devotees there occurs, as Kirch of Erlangen found, a genuine cardiac hypertrophy, which does not, however, affect ordinarily the whole heart. A disproportionate enlargement is characteristic, the type of enlargement varying with the kind of sport. For example, the right ventricle was hypertrophied in a boxer and the left ventricle in a swimmer, while in a mountain climber the right chamber was more developed than the left. The enlargement was usually in the direction of the longitudinal rather than the horizontal axis. According to Rautmann of Braunschweig, a portion of these changes are doubtless due to the fact that, at least in many sports, inspiration predominates over expiration, so that an increased volume of blood passes through the right side of the heart. It was found that the pulse beat diminished inversely with the length of the distance for which a runner is trained; for instance, long distance runners present when at rest a pulse beat of 60 and below, whereas the pulse beat of sprinters at rest is higher. Hence, the adjustment of the organism to outstanding achievements is accomplished through an increase of the stroke volume and not through an increase of the pulse beat. In the discussion it was emphasized that heart enlargement in sport devotees must not be judged wrongly or in a one-sided manner.

The second main topic, the "Significance of Gastroscopy," was discussed by Gutzeit of Breslau, who demonstrated its practical importance by an analysis of 3,500 cases. Henning

of Leipzig reported that he had examined 2,200 cases, 1,200 with an inflexible and 1,000 with a flexible gastroscope. With the former type gastric hemorrhage resulted in one instance, but with the flexible type no failures occurred. It is not possible in all cases to make the pylorus visible; the principal task of gastroscopy is to supply a clear view of the gastric mucosa. Roentgenology of the stomach does not furnish clear views; gastroscopy is much superior, and with the modern apparatus injuries are no longer possible.

The third topic was "The Acute Blood Disorders of the Myeloid System." Werner Schultz of Berlin discussed in detail agranulocytosis. Owing to inflammatory and necrotic processes occurring in the gastro-intestinal tract, agranulocytosis may be confused with typhoid. The etiology is uncertain, although there is no doubt that the constitution plays a part. The angina is doubtless not the primary thing. The organisms found by the bacteriologist have no etiologic importance. The morbid picture of agranulocytosis should be studied primarily from the standpoint of the symptoms. The most widely different processes, such as pregnancy, tuberculosis of the bone marrow, typhoid, other infections, drugs and toxins may lead to an outbreak of the disorder. On the basis of these facts, arsphenamine should be avoided in Plaut-Vincent's angina, since this benign disorder may be cured without the use of arsphenamine. With reference to the appearance of angina agranulocytica in various countries, neither experimental trials nor clinical observations in Germany have furnished proof of the alleged harmful effects of amidopyrine. The aplastic anemias also play an important rôle. Degeneration of the bone marrow may sometimes be the primary cause. As for treatment, liver, arsenic and particularly blood transfusions are to be considered rather than roentgen therapy.

On the basis of more than 500 sternal punctures, Naegeli of Zurich expressed the conviction that the bone marrow is of especial importance as the point of origin of these disorders. Neither cadaver blood nor circulating blood will give a clear insight into the situation, since the blood picture of the circulating blood is always under the influence not only of pathologic processes but also of regenerative processes occurring in the body. At the request of the federal bureau of health, V. Schilling of Münster investigated, in connection with agranulocytosis, alleged harmful effects of amidopyrine and barbituric acid preparations. Eighty clinical experiments and ten experiments on rabbits proved entirely negative. An injury of the hematopoietic organs, in the nature of agranulocytosis, could not be brought about by these substances. Schilling's point of view, that it is a question primarily of an exceptional individual reaction, was recognized also in the discussion. The outcome of the discussion was to the effect that, in cases apparently brought on by medicines, it is a question of individual "allergic" reactions. The practitioner, however, should not allow himself to be influenced in the use of approved remedies, since ordinarily no injuries result.

Professor Alfred Goldscheider

Prof. Alfred Goldscheider, who for many years occupied a chair in internal medicine at the University of Berlin, died, April 10, at the age of 77. He laid the foundations of his scientific activity as the assistant of Ernst von Leyden, at first devoting himself to the physiology of the nerves. We are indebted to him for our knowledge of atypical gout. In collaboration with his teacher (Leyden), he established the fundamental principles of modern physical therapy. As a university instructor and as a member of learned societies, Goldscheider served as a trustworthy champion of the rights, duties and privileges of the medical profession. He was held in high esteem and for many years was president of the Berlin Medical Society, resigning only at the behest of the new régime.

BUCHAREST

(From Our Regular Correspondent)

May 10, 1935.

Increased Mortality in Bucharest

Public health statistics show that mortality, as well as morbidity, has increased in recent years under the influence of the prevailing economic conditions. When the figures of 1923, 1924 and 1925 are compared with those of 1930, 1931 and 1932, an increase in mortality of 206, 164 and 193, respectively, is found to have occurred in diseases of the nervous system; of 1,680, 976 and 1,094 in pneumonia; of more than 1,000 in diabetes; of more than 1,600 in heart diseases, and of 2,000 in neoplasms. The increase is much more marked in provincial towns, where the increase in pneumonia is ascribed to the reduced resistance of the population, owing to defective nutrition. The increase in circulatory diseases, especially in the rural parts of the kingdom, is put down to defective nutrition and to the psychic factor induced by manifold worries and exhaustion as a sequel to strenuous agricultural work. The price of agricultural products being extremely low, they endeavor to make up for the shortage of income by exertion in working.

Blood Transfusion in Anemia and Infections

At a recent meeting of the Bucharest Medical Society Dr. Antonescu discussed the practice of blood transfusion in sepsis. Blood transfusion is valuable in various forms of anemia and in infectious diseases. To the former, belong anemia resulting from hemorrhage, due to injury, child birth, ulcers, shock, hemorrhoids, hemophilia, hemorrhagic diathesis, and the secondary anemias associated with disturbed nutrition and intoxication, pernicious anemia and hemolytic icterus. This list has been compiled by Professor Falta of Vienna. The effects of transfusion in these various diseases are not the same. In severe hemorrhage, transfusion constitutes a substitution therapy, the new blood taking over the function of that which was lost, and in addition it stimulates the hematopoietic areas. Only a few hours afterward reticulocytes appear in the blood. In infections and sepsis, transfusion promotes the production of blood corpuscles and the formation of immune bodies in the reticulo-endothelial system, which in severe sepsis is especially important because the whole system is flooded with bacteria and may be seriously damaged by the endotoxins, whereby its phagocytic and immunizing activity is impaired. The intake of healthy bacteria-free blood cleanses the system and restores its function. In most of the Bucharest clinics the direct method of blood transfusion is most commonly employed; the citrate method is less and less used.

A Disastrous Error in Prescribing Thallium Acetate

A regrettable example of an error in writing prescriptions occurred in Budapest. A professor of the agricultural high school in Czegéld consulted Dr. Dezsö Steiger Kazal, a lecturer on dermatology at the University of Budapest, for a fungous scalp disease from which his twin sons of 9 years suffered. Dr. Kazal, having had experience with thallium preparations in similar cases, prescribed this drug, but in error he wrote 5.0 Gm. instead of 0.5 Gm. The pharmacist having seen that the prescribed dose was far above the maximal dose hesitated to dispense it, but seeing the physician's signature thought that he intended to dispense the quantity among several patients, so he gave out the drug, as prescribed by the Hungarian pharmaceutical law, in a hexagonal bottle, meaning that the drug is for external use only. Dr. Kazal himself administered the drug with the result that both children died in five days. The police demanded a necropsy which revealed that the cause of death was an overdose of thallium. As the children weighed 30 Kg., each should have been given 24 centigrams, that is 48 centigrams, 0.5 Gm. for the two.

BELGIUM

(From Our Regular Correspondent)

May 7, 1935.

Scoliosis Among School Children

Addressing recently the Société belge d'orthopédie, Dr. Ledent presented some reflections on scoliosis occurring in pupils of the primary schools. The schools were accused of being the producers of scoliosis, just as their rôle in the genesis of myopia has been definitely shown. One may incriminate particularly the school furniture, which is often unadapted to the sitting height of the children. But parents who blame the school may fail to check up on the home furniture, especially the chairs. They may fail to note the discordant height of the table, at which a younger child sits uncomfortably suspended, while a tall youth bends over, thus accentuating a tendency to kyphosis or scoliosis.

Deviations of the vertebrae (anomalies, deformations and awkward attitudes) are frequent. The most recent researches are those of Strugurescu, who examined 2,640 children of all ages, and the inquiry of Szczygiat in Poznán. The speaker compared the results of their researches with data derived from his annual inspection of 1,000 children aged from 12 to 16 years (boys and girls), and he obtained about the same percentages as they:

School Year	Boys	Girls
1932-1933	5%	30%
1933-1934	7%	20%

To be sure, it is not the duty of the school to treat the children. Nevertheless, the law states that the school owes the child a suitable physical, intellectual and moral education. As regards physical education and orthopedics, it is well known that if a school is properly organized the number of scolioses may be reduced from 20 per cent to 7 per cent. The modern school will no longer be the main source of the orthopedist's patients when physical education receives the same attention as the other subjects of the curriculum.

International Conference on Physical Education

The Société médicale belge d'éducation physique et de sports has organized, for the period from June 30 to July 3, after the plan of the Journées médicales de Bruxelles, an international conference at which the following topics will be discussed: (1) the early detection of cardiac disorders, presented by Laubry of Paris, Samain of Paris, the physician-commandant of Chaisemartin, Joinville, and Van Dooren of Brussels; (2) motor tests in physical education, presented by Professor Laugier of Paris, Covaciu Ulmeanu of Bucharest, and René Ledent of Liége, and (3) le cyclisme, presented by Professor Hedon of Montpellier, Wlodzimicz Missiuro of Warsaw, Brandt of Geneva, and Prof. C. Heymans of Ghent. The conference will be opened Sunday, June 30, at a formal gathering, at which Prof. J. Demoor of Brussels will speak on the subject of "The Rôle of the Physician in Physical Education."

Illegal Practice of Physical Therapy

There are no legal provisions that reserve to doctors the application of physical therapy, which presents sometimes grave dangers when applied by inexperienced persons. There is an urgent need of devising some means of preventing incompetent persons with a limited education or of rudimentary intelligence from exposing the public to the menace resulting from the absence of diagnosis, and ignorance of the effects to be produced and the doses to be employed. It would be well if the use of physical therapy in its various forms might be restricted to masseurs and nurses who have received special training and who operate only under the direction of a physician and the terms of a prescription indicating the procedures and the dosage to be employed.

Physical therapeutic procedures present without doubt hidden dangers when sick and weakened organisms are involved, which is especially evident under the conditions that characterize a simple or pernicious anemia; for example, disorders of blood pressure, febrile disorders, or chronic disorders of the kidney, the heart, and of the nervous and the glandular systems. In addition to these cases, which are countless and in which a blind therapy may be harmful, one must emphasize also the danger of incorrect handling of apparatus. In view of these considerations, the Cercle Liégeois de médecine physique et de radiologie contends that a better supervision of masseurs and nurses giving physical therapeutic treatment should be devised.

RIO DE JANEIRO

(From Our Regular Correspondent)

April 15, 1935.

Antihormones

Dr. Thrles Martins, in a lecture before the Sociedade de Biologia of São Paulo, said that the administration of certain hormones for as long as four or five weeks results in a condition of apparent insensibility of the reacting organs. Growth, gonad-stimulative and thyrotropic hormones of the hypophysis when repeatedly injected in animals lose in a short time the stimulative capacity. Hisaw, Collip and some others verified these facts. Collip proved that the serum of horses injected with thyrotropic hormones has protective properties against those hormones. However, hormones can be given for a long time in some cases without any manifestation of the production of antihormones. In the experiments of parabiosis with normal and castrated rats it was verified that in the latter the secretion of prehypophyseal hormones is excessive and the stimulation of the genital organs intense. Even in experiments carried on for more than six months the ovary does not lose its reactive capacity. Since parabiosis is a method more physiologic than the injection of extracts for the administration of hormones, it is advisable to determine whether the antihormones that are observed in experiments are manufactured in their course because of the presence of certain substances that are not secreted by normal glands.

Surgical Treatment of Megacolon

Dr. Alipio Corrêa Netto, in a lecture before the Sociedade de Medicina e Chirurgia of São Paulo, said that the theory of achalasia of the so-called functional sphincters of the colon clarifies the pathogenesis of megacolon. The condition is caused by a dysfunction of the sphincters that fail to open when a wave of peristalsis reaches them. Because of the failure of the sphincters there is fecal stasis, which results in hypertrophy of the walls and dilatation of the colon. The achalasic theory was advanced for the first time as the cause of megacolon by Horste and verified later by Cameron, Amorim, Corrêa Netto and Etzel. The histologic examination of the colon in this condition shows that the abnormality originates in an inflammatory process, with destruction of the Auerbach and Meissner's plexuses. The condition is cured by the resection of the involved sphincters, which results in the prevention of the presence of fecal stasis and the correction of the abnormality. The speaker presented five patients, in whom the resection of the pelvirectal sphincter resulted in recovery. The correction of the abnormalities of the colon was evident, as seen by the roentgenograms taken before and after the operation.

Etiology of Trachoma

Dr. A. Busacca recently reported, before the Sociedade de Biologia of São Paulo, the results of his work on trachoma. He found rickettsia first in the epithelial cells and in the granular tissues that constitute the trachoma pannus in human beings, by using the method that Jahnel uses for identification of spirochetes in nervous tissues, and then in smears and sec-

tions of trachoma tissues by the method commonly used for identification of rickettsia. The inoculation of trachomatous material in several structures of mice, rabbits and guinea-pigs gave the following results: In the vitreous body of rabbits and guinea-pigs it caused choroidal and retinal lesions in some cases and the appearance of a corneal pannus, similar to human trachomatous pannus, in some other cases; in the testicle of guinea-pigs it caused an inflammation of the polyblastic type, transmissible in a series; in the mesothelial cells of the tunica vaginalis of the testicle, micro-organisms similar to those found in human tissues were evidenced; in the brain and spleen of mice, in the brain and testicle of rabbits and in the lymph nodes of guinea-pigs it gave negative results; in the brain of guinea-pigs it caused a slight reaction of the polyblastic type, after some serial passages. Some guinea-pigs developed a general disease following the inoculation of trachomatous material by intracerebral or intratesticular routes. The data obtained by the speaker were not enough to study the appearance of phenomena of immunity.

Avitaminosis in the Etiology of Mega-Esophagus and Megacolon

Dr. Eduardo Etzel, in a preliminary report recently read before the Sociedade de Medicina e Chirurgia of São Paulo, stated that mega-esophagus ("mal de engasgo") and megacolon are two abnormalities that frequently coexist with polyneuritis, disturbances of the gastric chemism (anachlorhydria and hypochlorhydria) and changes in the electrocardiogram. The latter exist in 70.8 per cent of the cases and are of various types. The speaker said that dysphagia, constipation, polyneuritis and disturbances of the gastric chemism and of the heart are also seen in beriberi, both in man and in animals. He presented a case of beriberi associated with "mal de engasgo" and made a reference to other similar cases, as well as to experiments in which he succeeded in producing megacolon in animals with avitaminosis B. The speaker concluded that mega-esophagus and megacolon are the result of a diet deficient in vitamin B. His conclusion is supported by the geographic distribution of "mal de engasgo" and also by the clinical and anatomicopathologic picture of the disease. Further conclusions will be presented by the speaker as soon as his experiments on avitaminosis in pigeons, guinea-pigs and dogs are finished.

Denervation of Adrenal Glands in Hyperthyroidism and Gastroduodenal Ulcer

Dr. A. Bernardes de Oliveira, in a preliminary report to the Sociedade de Medicina e Chirurgia of São Paulo, reviewed Crile's theories on the development and management of certain diseases peculiar to civilized men, with especial reference to the genesis of gastroduodenal ulcer and hyperthyroidism. The speaker discussed first the theories on the kinetic system, the law of orthogenesis and the phylogenetic pathology and then the indications, contraindications, technic, risks, complications and immediate and late results of the denervation of the adrenal gland (Crile's operation). He illustrated the technic of the operation and explained the conceptions on which it is based. In two cases of hyperthyroidism, two cases of gastroduodenal ulcer and a case of grave trophic edema of the face the operation, performed by the speaker, gave satisfactory immediate results that confirm those reported by Crile, the originator of the operation.

First Brazilian Congress Against Cancer

The first Brazilian Congress Against Cancer, organized by the Sociedade de Medicina e Chirurgia of Rio de Janeiro, will be held in October at Rio de Janeiro. The members of all the medical societies and medical institutions of Brazil will meet at the congress, which aims to organize a well directed intensified and systematic crusade against cancer.

Marriages

THOMAS S. WHITE, Millbrook, N. Y., to Elizabeth Juanita Greer, Ph.D., of Atlanta, Ga., June 6.

LEWIS H. ODEN JR., Blackshear, Ga., to Miss Agnes Elizabeth Shealy of Clinton, S. C., June 4.

JOHN BRECKENRIDGE OVERALL to Miss Mary Walker, both of Springfield, Ky., May 25.

STEPHEN WEBB DAVIS, Charlotte, N. C., to Miss Kate Jones of Atlanta, Ga., June 8.

JACOB C. ROSEN to Mrs. Iras Marina Schorsch, both of Philadelphia, May 28.

Deaths

William Brodnax Banister ⊕ Colonel, U. S. Army, retired, Petersburg, Va.; Hospital College of Medicine, Louisville, Ky., 1883; entered the army as an assistant surgeon in 1886; promoted to captain and assistant surgeon in 1891; veteran of the Spanish-American War; was promoted to grade of major in 1901 and in 1922 retired, with rank of colonel, at his own request, after thirty years' service; fellow of the American College of Surgeons; aged 73; died, May 1, of coronary thrombosis.

Charles Harper Richardson, Pittsfield, Mass.; Albany (N. Y.) Medical College, 1897; member of the Massachusetts Medical Society; fellow of the American College of Surgeons; at various times on the staffs of the Hillcrest Hospital and St. Luke's Hospital, Pittsfield, the W. B. Plunkett Memorial Hospital, Adams, the Fairview Hospital, Great Barrington, and the Robert C. Geer Memorial Hospital, Canaan, Conn.; aged 65; died, May 21, of carcinoma of the pancreas.

Newton Albert Powell, Toronto, Ont., Canada; M.B., Trinity Medical College, Toronto, in 1875 and M.D. in 1888; Bellevue Hospital Medical College, New York, 1875; professor emeritus of medical jurisprudence, University of Toronto Faculty of Medicine; fellow of the American College of Surgeons; consulting surgeon to the Grace and Toronto General Hospitals and the Toronto Hospital for Incurables; aged 85; died, April 7.

Arthur Ferdinand Fischer ⊕ Hancock, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1890; fellow of the American College of Surgeons; formerly secretary of the Houghton-Baraga-Keweenaw Counties Medical Society; on the staff of St. Joseph's Hospital; chief surgeon to the Quincy Mining Company; aged 67; died, May 17.

Henry Stanislaus Rowen ⊕ Boston; Harvard University Medical School, Boston, 1892; police surgeon; trustee of the Metropolitan State Hospital, Waltham, Mass.; for many years on the staff of the Boston Lying-In Hospital and trustee of the Boston City Hospital; aged 66; on the staff of St. Elizabeth's Hospital, where he died, April 29.

Walter Ford Henderson ⊕ Jackson, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1916; served during the World War; fellow of the American College of Physicians and member of the Radiological Society of North America; director of the x-ray department of the Baptist Hospital; aged 43; died, April 18.

Clarence Robert Hutchins, Saranac, N. Y.; New York University, University and Bellevue Hospital Medical College, 1911; member of the Medical Society of the State of New York; since 1917 health officer of the village of Dannemora and since 1916 health officer of Saranac; aged 50; died, March 5, of coronary thrombosis.

Mary Sherwood, Baltimore; Universität Zürich Medizinischen Fakultät, Zurich, Switzerland, 1891; medical director of the Bryn Mawr School; at one time director of the Municipal Bureau of Child Welfare, formerly trustee to the Goucher College; aged 79; died, May 24, at her home in Homeland, of heart disease.

Wallace Joseph Durel ⊕ New Orleans; Tulane University of Louisiana Medical Department, New Orleans, 1897; professor of clinical medicine, Tulane University Graduate School of Medicine; for many years on the staff of the Charity Hospital; aged 57; died, April 8, of hypertensive heart disease and coronary thrombosis.

Samuel Clarence Dean, Anderson, S. C.; Tulane University of Louisiana Medical Department, New Orleans, 1910; member of the South Carolina Medical Association; fellow of the Amer-

ican College of Surgeons; served during the World War; on the staff of the Anderson County Hospital; aged 51; died, May 17.

Benjamin Rush Field, Easton, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1883; member of the Medical Society of the State of Pennsylvania; veteran of the Spanish-American War; at one time mayor of Easton; formerly superintendent of the Easton Hospital; aged 73; died, May 1.

Clinton Willoughby D'Alemberte, Pensacola, Fla.; Tulane University of Louisiana Medical Department, New Orleans, 1903; member of the Florida Medical Association; served during the World War; for many years connected with the U. S. Public Health Service; aged 55; died, May 5.

Daniel Malloy Prince, Mount Vernon, Wash.; University of Virginia Department of Medicine, Charlottesville, 1924; member of the Washington State Medical Association and the Medical Society of Virginia; on the staff of the Mount Vernon General Hospital; aged 37; died suddenly, April 10.

Anthony Curt Freeman ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1910; at various times on the staffs of St. Mary's Hospital and the Floating Hospital of St. John's Guild; aged 51; died, May 23, in Claremont, N. H., of carcinoma of the right lung.

Lester William Bellows ⊕ Waterloo, N. Y.; Detroit College of Medicine, 1904; past president of the Seneca County Medical Society; aged 56; on the staff of the Waterloo Memorial Hospital, where he died, in May, of a skull fracture received in a fall from the porch of his home.

Charles Augustus Kinch, East Orange, N. J.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1873; aged 83; died, April 23, in the Presbyterian Hospital, Newark, following an operation for pyloric obstruction due to duodenal ulcer.

Walter Salem Weiss ⊕ Jefferson, Ohio; Western Reserve University Medical Department, Cleveland, 1888; county health officer; president of the school board of Jefferson, and member and past president of the county board of education; aged 71; died, April 22, in Eagle Rock, Calif.

George Henry Walter ⊕ Orangeburg, S. C.; Medical College of the State of South Carolina, Charleston, 1904; past president of the Orangeburg County Medical Society; served during the World War; on the staff of the Tri-County Hospital; aged 56; died, May 12.

Albert Marcellus Dawson, West Allis, Wis.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1907; member of the Indiana State Medical Association; aged 54; died, April 29, in the Deaconess Hospital, Milwaukee, of lobar pneumonia.

Mark Henry Williams, New York; University of the City of New York Medical Department, 1870; member of the Medical Society of the State of New York; aged 86; died, May 22, in the Wickersham Hospital, of chronic myocarditis and coronary sclerosis.

Columbus Fuller Bucklin, Sawyer, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1896; member of the Kansas Medical Society; aged 66; died, March 16, of diabetes mellitus, hypertrophy of the prostate and rupture of the gallbladder.

Rolfe Spaulding Russell, Greenfield, Mass.; University of Vermont College of Medicine, Burlington, 1930; member of the Massachusetts Medical Society; aged 28; on the staff of the Franklin County Hospital, where he died, March 17, of embolism.

John Ellis Hart, Wadesboro, N. C.; University of Maryland School of Medicine, Baltimore, 1897; member of the Medical Society of the State of North Carolina; for many years member of the state legislature; aged 59; died, April 7.

Robert Emmett Minahan, Green Bay, Wis.; Rush Medical College, Chicago, 1886; member of the State Medical Society of Wisconsin; also a lawyer; at one time mayor of Green Bay; for many years bank president; aged 77; died, April 27.

Eugene Oscar Pearson, Pittsburgh; Jefferson Medical College of Philadelphia, 1900; member of the Medical Society of the State of Pennsylvania; on the staff of St. Joseph's Hospital; aged 59; died, April 22, of coronary occlusion.

Howard J. Bush ⊕ Constantine, Mich.; Detroit College of Medicine, 1908; on the staff of the Three Rivers (Mich.) Hospital; aged 51; died, May 2, of pneumonia and coronary and pulmonary thrombosis following an appendectomy.

William Walker Evans, Blakely, Ga.; Atlanta College of Physicians and Surgeons, 1902; member of the Medical Association of Georgia; past president and secretary of the Screven County Medical Society; aged 58; died, May 10.

Reuben Hayes Irish ⊕ Troy, N. Y.; Albany Medical College, 1897; member of the board of managers of the Pawling Sanatorium, Wynantskill; on the staffs of the Leonard and Samaritan hospitals; aged 63; died, April 30.

Mary Byington Nicola, Los Angeles; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1897; aged 66; died, March 17, in the New England Sanitarium and Hospital, Melrose, Mass., of biliary cirrhosis.

William Jennings Erkenbeck, Grand View, Idaho; American Medical Missionary College, Chicago, 1902; member of the Idaho State Medical Association; aged 55; died, April 15, in the Veterans Administration Facility, Boise.

Benjamin Siegel ⊕ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1919; on the staffs of the Israel-Zion Hospital and the Cumberland Hospital; aged 40; died, May 17, of cerebral hemorrhage.

William Gifford Francis, Waynesville, N. C.; Jefferson Medical College of Philadelphia, 1915; member of the Medical Society of the State of North Carolina; served during the World War; aged 45; died, May 18.

Charles Harold Ainsworth, St. Clair, Mich; Detroit College of Medicine and Surgery, 1930; member of the Michigan State Medical Society; aged 32; died, May 13, in St. Clair Community Hospital, of pneumonia.

Frederick Stickney Caverly ⊕ Passaic, N. J.; Dartmouth Medical School, Hanover, N. H., 1904; on the staffs of the Passaic General and St. Mary's hospitals; aged 52; died, May 15, at his home in Clifton, of heart disease.

Grosvenor L. T. Hayes, Graniteville, Vt.; University of Bishop College Faculty of Medicine, Montreal, Que., Canada, 1895; aged 63; died, April 2, in the Royal Victoria Hospital, Montreal, Que., Canada.

Joseph Thomas Kennedy, Cincinnati; Medical College of Ohio, Cincinnati, 1907; served during the World War; connected with the Veterans Administration; aged 50; died, April 30, of lobar pneumonia.

Elias Goldberg, Boston; Tufts College Medical School, Boston, 1907; aged 50; died, May 25, as the result of injuries received when he jumped from a stairway window between the ninth and tenth floors.

Roger L. Hall, Pawhuska, Okla.; Missouri Medical College, St. Louis, 1894; formerly councilman, member of the school board and state senator; aged 65; died, April 22, of coronary thrombosis.

William Henry Robbins ⊕ Martins Ferry, Ohio; Jefferson Medical College of Philadelphia, 1916; aged 52; on the staff of the Martins Ferry Hospital, where he died, April 18, following a mastoid operation.

Julien Arthur Riester ⊕ Buffalo; University of Buffalo school of Medicine, 1899; on the staff of the Buffalo Hospital of the Sisters of Charity; aged 64; died suddenly, April 20, of angina pectoris.

Joseph D. Orr, Leechburg, Pa.; Jefferson Medical College of Philadelphia, 1885; aged 77; died, April 29, in the Allegheny Valley Hospital, Tarentum, of arteriosclerosis and hypertrophy of the prostate.

Solomon E. Allgood, Lucas, Kan.; Memphis (Tenn.) Hospital Medical College, 1887; University of Louisville (Ky.) Medical Department, 1891; aged 84; died, April 1, of bronchopneumonia.

Carl Atkins Foster, Columbia, S. C.; Medical College of Virginia, Richmond, 1904; member of the South Carolina Medical Association; aged 56; died, May 15, of coronary occlusion.

Newton W. Amos, St. Louis; Washington University School of Medicine, St. Louis, 1897; member of the Missouri State Medical Association; aged 67; died, May 6, of angina pectoris.

Arthur Cocheran Walker, Springfield, Vt.; Atlanta Medical College, 1915; member of the Vermont State Medical Society; served during the World War; aged 43; died, May 31.

William Dibble Clark, Oakland, Calif.; University of California Medical Department, 1884; aged 71; died, April 28, of hypertension, chronic myocarditis and hypostatic pneumonia.

Frank C. Bressler ⊕ Baltimore; College of Physicians and Surgeons, Baltimore, 1885; on the staff of the Mount Sinai Hospital; aged 75; died suddenly, May 18, of coronary thrombosis.

Sidney J. Richardson, White Cloud, Mich.; Chicago Homeopathic Medical College, 1903; member of the Michigan State Medical Society; aged 65; died, April 20, of pneumonia.

Chester Chesterfield Groff, Richmond Hill, N. Y.; Baltimore Medical College, 1904; served during the World War; aged 53; was found dead, May 31, in a hotel at Baltimore.

Judge Crayton Buckelew, Sulligent, Ala.; Chattanooga (Tenn.) Medical College, 1898; member of the Medical Association of the State of Alabama; aged 63; died, April 27.

George E. Wiley, Bristol, Va. (licensed in Virginia, under the Exemption Law of 1885); member of the Medical Society of Virginia; city health officer; aged 83; died, March 25.

Joseph Godfrey ⊕ Lancaster, Wis.; Rush Medical College, Chicago, 1880; past president of the Grant County Medical Society; aged 79; died, May 23, of coronary occlusion.

Lisle William Woodhouse, Torrington, Conn.; Jefferson Medical College of Philadelphia, 1916; member of the Connecticut State Medical Society; aged 44; died, April 5.

Sidney Harris Easton ⊕ Peoria, Ill.; Rush Medical College, Chicago, 1913; member of the Clinical Orthopedic Society; served during the World War; aged 44; died, May 8.

Leslie W. Keyes, St. Joseph, Mich.; Columbus (Ohio) Medical College, 1882; aged 79; died, April 30, in Whitehall, of angina pectoris, myocarditis and arteriosclerosis.

William M. Popplewell, Vista, Calif.; Ensworth Medical College, St. Joseph, Mo., 1896; aged 72; died, March 31, in the Oceanside (Calif.) Cottage Hospital, of carcinoma.

John Maxwell Pearson ⊕ Glendale, Ariz.; Georgetown University School of Medicine, Washington, D. C., 1907; aged 50; died suddenly, May 12, of coronary occlusion.

John R. Abner, Hamlet, Ind.; Curtis-Physio-Medical Institute, Marion, 1884; on the staffs of the Holy Family and Fairview hospitals, La Porte, aged 77; died, May 24.

Grant Francis Tanner ⊕ Turtle Lake Wis.; Medical Department of Hamline University, Minneapolis, 1895; aged 68; died, April 22, of acute nephritis and myocarditis.

Henry Hessin Nichols, Hatch, N. M.; Jefferson Medical College of Philadelphia, 1896; at one time coroner of Marshall County, Iowa; aged 66; died suddenly, April 5.

Christopher Morris Kelly, Grand Rapids, Mich.; Niagara University Medical Department, Buffalo, 1890; aged 71; died, April 16, in the Kent County Receiving Hospital.

William Pafford Bullard, Sopchoppy, Fla.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1916; aged 42; died, April 22, in a hospital at Thomasville, Ga.

Herbert A. Francisco, Rutland, Vt.; Bellevue Hospital Medical College, New York, 1891; aged 67; was found dead in bed, June 1, of cardiovascular renal disease.

J. Edwin Caldwell, Perryville, Ky.; University of Louisville Medical Department, 1888; member of the Kentucky State Medical Association; aged 73; died, May 9.

Wesley Grant Simmons ⊕ Dover Plains, N. Y.; Medico-Chirurgical College of Philadelphia, 1898; aged 65; died, May 8, in the Presbyterian Hospital, New York.

Delos D. Stevens, Paralta, Iowa; Western Reserve University Medical Department, Cleveland, 1882; aged 86; died, April 1, of myocarditis and mitral stenosis.

Isaac Newton Hutt, Ogden, Ark. (licensed in Arkansas in 1903); aged 61; died, March 20, in the Michael Meagher Hospital Texarkana, of acute appendicitis.

Louis Victor Leone, Hartford, Conn.; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1890; aged 74; died, May 6, of bacterial endocarditis.

John M. F. Barron, Milner, Ga. (licensed in Georgia in 1887); member of the Medical Association of Georgia; also a minister; aged 78; died, April 30.

Henry Clay Dorroh, Ashland, Ky.; University of Louisville School of Medicine, 1910; served during the World War; aged 65; died suddenly, April 18.

Fred Lawrence Schaffner, Ottawa, Ont., Canada; Trinity Medical College, Toronto, 1887; aged 79; died, May 22, of myocarditis and arteriosclerosis.

Josephine J. Resnik Krupp, New York; Woman's Medical College of Pennsylvania, Philadelphia, 1910; aged 45; died, May 15, of cerebral hemorrhage.

Pauline Wilson Bredow, Glenwood, Fla.; University of Michigan Homeopathic Medical School, Ann Arbor, 1900; aged 59; died, May 8, of carcinoma.

Sheldon Pierce Hewins, Stockton, N. Y.; Chicago Homeopathic Medical College, 1888; aged 74; died, March 18, of hemiplegia and arteriosclerosis.

John William Hopkins, Fayetteville, W. Va.; Kentucky School of Medicine, Louisville, 1894; aged 74; died, May 6, of a self inflicted bullet wound.

Karl Walter Allison ⊕ Youngstown, Ohio; College of Physicians and Surgeons, Baltimore, 1911; aged 51; died, May 22, of cerebral hemorrhage.

Thomas Henry Tracy, Los Angeles (licensed in Ontario in 1880 and Massachusetts in 1894); aged 77; died, March 16, of bronchitis and heart disease.

Henry Bernice Ford, Tompkins, Sask., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1885; died, March 31, of heart disease.

Robert Lee Grimes, Urbana, Ohio; College of Physicians and Surgeons, Baltimore, 1890; aged 70; died, April 17, of carcinoma of the prostate.

D. E. Hewitt, Carthage, Mo.; Missouri Medical College, St. Louis, 1881; aged 77; died, April 19, in Aberdeen, Wash., of cerebral hemorrhage.

Charles Henry Franz, San Francisco; Jefferson Medical College of Philadelphia, 1888; served during the World War; aged 69; died, June 5.

Aime Trudel, Ottawa, Ont., Canada; M.B., Laval University Faculty of Medicine, Quebec, Que., Canada, 1879 and M.D., in 1881; died, April 19.

Louis Theophile Pare, Nicolet, Que., Canada; Laval University Faculty of Medicine, Quebec, 1883; aged 75; died, in April, in New York.

Edward Charles Dreher, Wilkes-Barre, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; aged 63; died, March 4.

Franklin William Bock, Rochester, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; aged 64; died, May 3.

Francis Marion Murray, Delaware, Ohio; Jefferson Medical College of Philadelphia, 1877; also a pharmacist; aged 80; died, April 25.

James Burnett Ford, Asbury Park, N. J.; Howard University College of Medicine, Washington, D. C., 1918; aged 44; died, April 26.

Edwin Davis, Tulsa, Okla.; University of Arkansas School of Medicine, Little Rock, 1913; aged 56; died, March 27, in a local hospital.

Ellsworth Gamble, Waverly, N. Y.; Eclectic Medical Institute, Cincinnati, 1889; aged 71; died, May 21, of cerebral hemorrhage.

Ira William Daly, New York; Long Island College Hospital, Brooklyn, 1918; aged 42; died, May 12, in the Fitch Sanitarium.

William N. Haynes ⊕ Victor, W. Va.; Kentucky School of Medicine, Louisville, 1894; aged 64; died, May 10, in a hospital at Rainelle.

William R. Beck, Huntington, Ind.; Kentucky School of Medicine, Louisville, 1892; aged 70; died, May 21, of coronary thrombosis.

Eugene Clayton Mowry ⊕ New York; University of Vermont College of Medicine, Burlington, 1889; aged 74; died, April 27.

George W. Post, Milton, Wis.; Chicago Medical College, 1883; bank president; aged 75; died, May 10, of cerebral hemorrhage.

James E. Duncanson, Wray, Colo.; Lincoln (Neb.) Medical College of Cotner University, 1898; aged 77; died, April 23.

Lorenzo Waldemar Bolan, Ridgewood, N. J.; New York Homeopathic Medical College, 1885; aged 81; died, April 21.

William Joseph Halbeisen, Camden, N. J.; Jefferson Medical College of Philadelphia, 1897; aged 64; died, May 1.

James D. Hamrick, Carrollton, Ga.; University of Georgia Medical Department, Augusta, 1885; aged 77; died, May 7.

Harry George De Pew, Kansas City, Mo.; Louisville (Ky.) Medical College, 1891; aged 70; was found dead in May.

Oscar Dunham, Creelsboro, Ky.; University of Louisville Medical Department, 1897; aged 69; died, May 4, of carcinoma.

Gardner Wells Hall ⊕ Boston; Johns Hopkins University School of Medicine, Baltimore, 1901; aged 59; died, April 21.

Horace Greeley Padget, Tully, N. Y.; Syracuse University College of Medicine, 1908; aged 62; died, April 29.

William Daniel Potter, Clinton, Miss.; Memphis (Tenn.) Hospital Medical College, 1892; aged 65; died, May 11.

J. C. Merle Drake, Erie, Pa.; Hahnemann Medical College and Hospital, Chicago, 1880; aged 79; died, April 14.

Annie M. Hoppins, Los Angeles; Chicago Homeopathic Medical College, 1880; aged 95; died, April 28.

James Henry Duggan, Irwinton, Ga.; Southern Medical College, Atlanta, 1884; aged 70; died, May 11.

Bureau of Investigation

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[EDITORIAL NOTE: The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product.]

No-Septo.—No-Septo Laboratories, Tacoma, Wash. Composition: Essentially a volatile oil such as turpentine, in petrolatum. For chronic sores, soft corns, piles, boils, dandruff, scalp diseases, etc. Fraudulent therapeutic claims.—[*N. J. 21544; August, 1934.*]

Mentholyptus.—Cralego Pharmacal Co., Los Angeles. Composition: Essentially volatile oils including those of camphor, eucalyptus and menthol, in a petrolatum base, colored green. For pneumonia, bronchitis, asthma, rheumatism, eczema, etc. Fraudulent therapeutic claims.—[*N. J. 21545; August, 1934.*]

Bevill's Lotion.—Bevill Co., Birmingham, Ala. Composition: Essentially salicylic acid, carbolic acid, alcohol and water, perfumed with wintergreen. For skin troubles, piles, etc. Fraudulent therapeutic claims.—[*N. J. 21547; August, 1934.*]

Ercolin.—Peoples Drug Stores, Inc., Washington, D. C. Composition: Gallic acid and glycerin dissolved in water. For hay fever, catarrh, sinus trouble, etc. Fraudulent therapeutic claims.—[*N. J. 21548; August, 1934.*]

Moroline.—Red Line Products Co., Brooklyn. Composition: Petrolatum. For sores, wounds, sore throat, coughs, etc. Fraudulent therapeutic claims.—[*N. J. 21551; August, 1934.*]

Asma-Tea.—Asma-Tea Co., New York. Composition: Essentially ephedra, licorice, perilla seed and a nut. For asthma, bronchitis, hay fever, etc. Fraudulent therapeutic claims.—[*N. J. 21553; August, 1934.*]

Liberty Tonic.—Clyde Collins Chemical Co., Memphis, Tenn. Composition: Essentially epsom salt, ferric chloride, extracts of plant drugs including a laxative, with a small proportion of salicylic acid and water. For blood, kidney and bladder disorders, indigestion, etc. Fraudulent therapeutic claims.—[*N. J. 21556; August, 1934.*]

Liberty Liniment.—Clyde Collins Chemical Co., Memphis, Tenn. Composition: Essentially a petroleum distillate, such as kerosene, and a small amount of wintergreen. Fraudulent therapeutic claims.—[*N. J. 21556; August, 1934.*]

Cly-Tone Tonic.—Clyde Collins Chemical Co., Memphis, Tenn. Composition: Essentially epsom salt, plant drug extracts, small amounts of salicylic acid and an iron compound, with water. For blood, kidney and stomach disorders, etc. Fraudulent therapeutic claims.—[*N. J. 21556; August, 1934.*]

Liberty Nerve and Gland Treatment.—Clyde Collins Chemical Co., Memphis, Tenn. Composition: Essentially baking soda (92 per cent) and starch. Fraudulent therapeutic claims.—[*N. J. 21556; August, 1934.*]

Endazoin.—Ray Sales Co., and Endazoin Co., Inc., New York. Composition: Essentially zinc oxide (12 per cent), salicylic acid (4 per cent), and volatile oil such as turpentine oil (5 per cent), incorporated in wool fat. For eczema, psoriasis, chronic sores, etc. Fraudulent therapeutic claims.—[*N. J. 21557; August, 1934.*]

Tee Tone Aspirin Tablets.—Red Line Products Co., Brooklyn. Composition: Aspirin, 5 grains per tablet. "For relief of . . . Rheumatism . . . Lumbago, Sore Throat . . . Toothache, Earache, Influenza, Sleeplessness." Fraudulent therapeutic claims.—[*N. J. 21558; August, 1934.*]

Texas Mineral Crystals.—Dollar Crystal Co., Omaha, and Walgreen Co., Chicago. Composition: Essentially crystallized Glauber's salt, with small amounts of epsom and common salt. For rheumatism, stomach trouble, skin diseases, neuritis, high blood pressure, etc. Fraudulent therapeutic claims.—[*N. J. 21559; August, 1934.*]

Lincoln Cough Mixture.—MacAndrews & Forbes Co., Camden, N. J. Composition: Essentially plant drug extracts including ipecac and licorice, with ammonium chloride, alcohol (73 per cent by volume), sugar and water. Fraudulent therapeutic claims.—[*N. J. 21561; August, 1934.*]

Baume Analgesique.—American Pharmaceutical Co., Inc., New York. Composition: Essentially menthol (23.4 per cent) and wintergreen (0.5 per cent), in an ointment base. For rheumatism, bronchitis, bunions, coughs, croup, earache, etc. Fraudulent therapeutic claims.—[*N. J. 21575; August, 1934.*]

Velvetol.—Bunny Drug Co., and Biddle Purchasing Co., New York. Composition: White petrolatum. For wounds, sore throat, etc. Fraudulent therapeutic claims.—[*N. J. 21570; August, 1934.*]

Vermilax.—Biddle Purchasing Co., New York. Composition: Essentially ground kamala and a small amount of starch in a mixture of alcohol and water. For common worms, tapeworms, etc. Fraudulent therapeutic claims.—[*N. J. 21573; August, 1934.*]

Geuda Springs Crystals.—Geuda Crystals Co., Geuda Springs, Kan. Composition: Essentially common salt (92.6 per cent), with small amounts of Glauber's and epsom salts and calcium sulphate, and a trace of a phosphate. For constipation, liver and kidney disorders, rheumatism, eczema, obesity, etc. Fraudulent therapeutic claims.—[*N. J. 21568; August, 1934.*]

Hunt's Salve.—A. B. Richards Med. Co., Sherman, Texas, and Allied Drug Products Co., Chattanooga, Tenn. Composition: Essentially chrysarobin, carbolic acid, sulphur, volatile oils including sassafras, and small amounts of a mercury compound and iodine, in a base of petrolatum and rosin. For all skin disorders. Fraudulent therapeutic claims.—[*N. J. 21584; August, 1934.*]

Premo Ergot-Apiol Capsules.—Blackman & Blackman, New York. Composition: Essentially plant material including aloin, volatile oils such as apiol and savin, and traces of ergot alkaloids. For female disorders. Fraudulent therapeutic claims.—[*N. J. 21585; August, 1934.*]

Alkalex Powder.—Standard Chemical Co., Des Moines, Iowa. Composition: Essentially large amounts of calcium carbonate and baking soda, with small amounts of magnesium carbonate and bismuth subcarbonate. For stomach disorders, including ulcers. Fraudulent therapeutic claims.—[*N. J. 21586; August, 1934.*]

Nu Pine.—Ray Sales Co., New York. Composition: Essentially alcohol (80.8 per cent), volatile oils such as camphor and eucalyptol, and water. For hay fever, sinus congestion, bronchial asthma, etc. Fraudulent therapeutic claims.—[*N. J. 21589; August, 1934.*]

Minwater Crystals.—Minwater Crystal Co., Dallas, Texas. Composition: Essentially dried Glauber's salt, with small amounts of sodium carbonate and common salt. For rheumatism, diabetes, stomach, bladder and kidney disorders, etc. Fraudulent therapeutic claims.—[*N. J. 21593; August, 1934.*]

Seven A's Iron Tonic.—Clyde Collins Chemical Co., Inc., Memphis, Tenn. Composition: Essentially epsom salt, iron chloride, a small amount of salicylic acid, extracts of plant drugs, and water. For stomach, kidney, liver and blood disorders. Fraudulent therapeutic claims.—[*N. J. 21594; August, 1934.*]

Beatsol Drawing Salve.—G. & W. Laboratories, Inc., Jersey City, N. J. Composition: Essentially sulphonated bitumen incorporated in petrolatum. For boils, carbuncles, ulcers, felons, etc. Fraudulent therapeutic claims.—[*N. J. 21595; August, 1934.*]

A-Vol Tablets.—D. P. C. Laboratories, Holton, Kan. Composition: 1.3 to 1.5 grains of acetphenetidin per tablet. Misbranded because below professed standard or quality claimed, namely, "Two and one-half Grs. acetphenetidin"; misbranded, also, because of fraudulent therapeutic claim, "tends to relieve pain."—[*N. J. 21596; August, 1934.*]

Winsol Corlevo.—Winsol, Inc., Boston. Composition: Essentially plant drug extracts including alkaloids and valeric acid, sugar, alcohol and water. For female disorders. Fraudulent therapeutic claims.—[*N. J. 21598; August, 1934.*]

Cascarets (Chocolate Flavor).—Sterling Products Co., Inc., Wheeling, W. Va. Composition: Lozenges essentially containing laxative drugs including phenolphthalein (2.1 grains per lozenge), incorporated in sweetened, flavored chocolate. Adulterated because strength and purity fell below professed standard and quality under which it was sold; misbranded because of confusion with the old-time Cascarets made from cascara sagrada, whereas the active ingredient in the chocolate-flavored Cascarets is phenolphthalein; misbranded, also, because of fraudulent therapeutic claims as a remedy for habitual constipation, etc.—[*N. J. 21777; September, 1934.*]

Cascarets.—Sterling Products Company, Inc., Wheeling, W. Va. Composition: Lozenges essentially containing phenolphthalein (0.62 grain each), plant drug extracts including cascara sagrada and licorice, with flavoring oils including wintergreen and sassafras, and sugar. Misbranded because represented as being chiefly candy and having cascara sagrada as potent ingredient, whereas cathartic action was due to phenolphthalein and the stuff was not candy; misbranded, also, because fraudulently represented as a cure for habitual constipation.—[*N. J. 21793; September, 1934.*]

Vitalitea.—Vitalitea Co., Los Angeles. Composition: A mixture of senna and maté. For obesity, stomach and kidney disorders, etc. Fraudulent therapeutic claims.—[*N. J. 21778; September, 1934.*]

Bron-Co Capsules.—Pacific Laboratories, Inc., Los Angeles. Composition: Sodium and ammonium chlorides and sulphate, a phenolic compound, and acetanilid (0.042 gram per capsule). For all forms of bronchitis, pulmonary catarrh, cough, etc. Fraudulent therapeutic claims.—[*N. J. 21780; September, 1934.*]

Phenlin Oris.—John H. Wood Co., Philadelphia. Composition: Ointment of petrolatum and paraffin, with small amounts of cresylic acid and water. Adulterated because strength and purity below professed standard and quality; misbranded because fraudulently represented as a preventive against infection.—[*N. J. 21781; September, 1934.*]

Tru-Aspingum.—Tru-Lax Mfg. Co., Newark, N. J. Composition: Essentially aspirin and salicylic acid in a mixture of sugar, starch and gum. For sore throat, rheumatism, tonsillitis, influenza, etc. Fraudulent therapeutic claims.—[*N. J. 21782; September, 1934.*]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF PNEUMONIA

To the Editor:—Will you please enlighten me as to the best form of treatment of lobar pneumonia in adults by answering the following: 1. Is Felton's serum (Lilly) of any value even if the pneumococcus does not fall in any of the four types? If it has been given before this is determined will it do any harm to the patient? 2. Is a cardiac stimulant, other than whisky, indicated when the pulse is below 130, regular and of good quality? 3. When a cardiac stimulant, other than whisky, is indicated, which is most efficacious, caffeine sodiobenzoate or digitalein? 4. Is diathermy to the chest an accepted treatment in lobar pneumonia and, if so, is it of any advantage over such a counterirritant as mustard plasters? Please omit name and address.

M.D., Iowa.

ANSWER.—Obviously the answer to this question depends largely on the personal opinions and individual experience of the authority consulted. Even a symposium seldom yields a unanimous expression.

1. This query, as worded, indicates a misunderstanding in the mind of the inquirer concerning the number of types of pneumococci. In the original classification of Avery and his co-workers (Avery, O. T.; Chickering, H. T.; Cole, Rufus, and Dochez, A. R.: Acute Lobar Pneumonia, Monograph VII, Rockefeller Institute for Medical Research, October 1917) there were three specific types of pneumococci and a fourth group, which contained all other strains. At the present time, workers in this field recognize thirty-two types of pneumococci and a small group of unclassified, or x, organisms which may prove to be a number of specific types. The additional types were segregated by Cooper (Cooper, Georgia; Edwards, Marguerite, and Rosenstein, Carolyn: The Separation of Types Among the Pneumococci Hitherto Called Group IV, and the Development of Therapeutic Antiserums for These Types, *J. Exper. Med.* **19**:461 (March) 1929).

The preparation referred to is made by injecting into horses, pneumococci types I, II, III and type IV (Cooper). There is no attempt to produce in the horses, antiserum for the other twenty-seven types of pneumococci, though most of these were formerly in group IV (Avery). It is not possible to make serums valent for all types of pneumococci by injecting a single horse. Some of these types of pneumococci are very toxic, yielding high mortality. For some of them, effective antiserums have been produced (Bullowa, J. G. M.: The Therapeutic Value of Pneumococcus Type VII [Cooper] Serum, *Proc. Soc. Exper. Biol. & Med.* **29**:343 [Dec.] 1931; Therapeutic Pneumococcus Type VIII [Cooper] Serum, THE JOURNAL, May 12, 1934, p. 1560).

The manufacturers evidently consider seriously the unitage in the serum against type I and type II only as these are the only units mentioned on the package. The claim that the addition of heterophile antibody is of clinical advantage is as yet unsubstantiated.

In accordance with present knowledge, the action of antiserum in pneumococcic pneumonia is entirely type specific. The amount of antiserum required depends chiefly on the day of the disease serum treatment is commenced and the possible presence of bacteremia. Evaluation of specific serum in small or large series of pneumonia patients without an attempt to type the pneumococci responsible is an unscientific procedure. It is misleading to practitioners to cite mortality rates in such heterogeneous series. No intelligent clinician would expect to benefit, by antipneumococcus serum, pneumonias of other than pneumococcus origin.

In view of the fact that there may be delay or difficulty in determining the correct type of pneumococcus, some consider it good practice to give to adult patients with pneumonia antipneumococcus serum for pneumococcus types I and II before the type is determined, as pneumonias due to these types are the most frequent. The administration of the serum, however, does not release the clinician from the obligation to determine the type of pneumococcus involved by at least several attempts to obtain the type from sputum or by blood cultures. He should give enough serum to have a therapeutic effect or to determine whether some other type is involved. The administration of pneumococcus antiserum of a type different from that causing the pneumonia does not harm a patient. It may produce serum sickness and it may sensitize the patient to serums of animals from which it is made. These are annoying but are not adequate objections in view of the serious character of lobar pneumonia and the advantage of earlier administration of serum.

2 and 3. The frequency of the pulse should not be considered an indication for cardiac stimulation in pneumonia. A pulse rate of 120 is frequently considered an indication for oxygen therapy. The indications for cardiac stimulants are the same as in the absence of pneumonia; namely, signs of congestive failure. When bacteremia and toxemia are overcome by the administration of specific antiserum in types for which it is available, the pulse rate will fall without stimulants. Fall in pulse rate is more important than fall in temperature as a guide to adequate serum dosage. When the pulse rate does not fall after adequate serum dosage there may be (1) a suppurative complication, (2) invasion with another organism or (3) serum sickness. In some large pneumonia services, whisky is not given as a routine to patients with pneumonia.

Cardiac stimulation with drugs such as digitalein and caffeine sodiobenzoate have little place in the newer management of the lobar pneumonias. Early termination of the illness with specific antiserum and relief of anoxemia with oxygen obviate the need for cardiac stimulation by terminating the disease. Patients with the lobar pneumonias usually require sedatives. Caffeine sodiobenzoate may in some patients increase irritability and prevent sleep.

Patients with the lobar pneumonias most frequently die of (*a*) A bacteremia for which there is no treatment other than specific antiserum. (*b*) Pulmonary edema, the mechanism of which in lobar pneumonia is as yet ill understood but for which 50 per cent dextrose with insulin may be helpful (Bullowa, J. G. M.: Pulmonary Edema Occurring in the Course of Lobar Pneumonia Treated with Intravenous, Hypertonic, Fifty per Cent Glucose Solution and Insulin: Report of a Case, *M. Clin. North America* **15**:1115 [March] 1932). (*c*) Dehydration, for which large intravenous infusions of saline solution with dextrose may be beneficial. (*d*) Or, rarely, congestive failure, for which digitalis may be beneficial.

The present point of view concerning digitalis therapy is well expressed by John Wyckoff, Eugene F. Du Bois and I. Ogden Woodruff (The Therapeutic Value of Digitalis in Pneumonia, THE JOURNAL, Oct. 25, 1930, p. 1243). They conclude, after a thoroughly controlled study involving 742 patients, that "the routine giving of digitalis to patients with lobar pneumonia is dangerous. . . . Clinical symptoms of digitalis toxicity are not a sufficient guide in digitalis therapy in lobar pneumonia to prevent an increase in mortality when the drug is used. . . . When given in doses too small to show any effect, it causes no changes in mortality." They observed an increased mortality in all types of pneumococcic pneumonia except in patients suffering from pneumonias due to pneumococcus type II.

4. Diathermy to the chest is not an accepted specific treatment in lobar pneumonia. It may be used as an adjuvant for purposes of counterirritation, but it has no specific action and has no advantage over other less involved means such as the one mentioned by the inquirer. It has the disadvantage of complicating the administration of oxygen by introducing a fire hazard and requiring the discontinuance of oxygen administration while diathermy is being given.

Carl Binger has summarized his researches on this subject in chapter 15 of volume 1 of the "Principles and Practices of Physical Therapy" by Mock, Pemberton and Coulter (Hagerstown, Md., W. F. Prior Co., Inc., 1934). He says: "There is no evidence that the temperature of the pneumococcic lung can be raised to more than a degree above the systemic temperature. . . . There is no reason to believe that exudates will melt as the result of diathermy." Binger, in concluding his study, infers that the benefit alleged to be due to the use of diathermy may be caused by the "mental attitude of the patient, which can be greatly influenced by the magic of a dancing blue spark and by the feeling that he is being regularly and energetically treated." His experiments were performed at the Rockefeller Institute Hospital and involved actual measurement of the temperature in the lungs after treating patients suffering from lobar pneumonia with diathermy.

In spite of recent praise of diathermy in pneumonia, addressed to the public in a monthly lay journal, it is not an important primary or adjuvant therapeutic measure for the lobar pneumonias. The crux of the problem of the pneumonias is the presence or absence of bacteremia. Only such therapies as terminate bacteremia, neutralize toxemia or prevent the establishment of bacteremia can be said to be primary specific treatments.

PAINFUL SCAR AFTER EXCISION OF BARTHOLIN CYST

To the Editor:—What treatment would you advise for a painful scar following excision of a cyst of the Bartholin gland? At times, especially at the premenstrual and postmenstrual periods, the patient complains of swelling and marked tenderness over the scar. This cyst was completely excised nearly eighteen months ago and the region was examined by an experienced surgeon, who thought there was no recurrence of the cyst. I have used 10 per cent sulphonated bitumen solution and fluidextract of thuja with some relief but no permanent effect. Please omit name.

M.D., Wisconsin.

ANSWER.—Painful scar is frequently due to the development of a neuroma in the scar tissue. Such neuromas may likewise produce tenderness even though the neuroma is microscopic. Verification of the occurrence of the intermittent swelling of which this patient complains is an important diagnostic point. Its existence would indicate that there is a gland remnant sufficient to produce the symptoms. A single examination would not rule this out. Obviously the condition should be studied at the time the patient complains of swelling. If the mass is found, however small it might be, a reexcision would be justified in view of the long continued complaint. In the absence of local changes the diagnosis is most probably neuroma. Mild roentgen therapy, from three to six treatments of one-third erythema dosage at intervals of five to seven days, may result in cure. Injection of 0.5 per cent procaine hydrochloride at the time of discomfort, sufficient to produce mild distention of the labium and repeated daily or once every other day, may serve the purpose. Finally, even in the absence of actual swelling, excision of the old scar with its neuroma may be necessary to establish a cure.

PRIMARY MYOCARDIAL FAILURE AND VASCULAR COLLAPSE

To the Editor:—Dr. Bernard Fantus, in his article on fever regimen (THE JOURNAL, Aug. 18, 1934, p. 484) cautions one to distinguish between primary myocardial failure and vascular collapse. The differential diagnosis here, as well as the therapy for the former, would be appreciated. Please omit name.

M.D., Georgia.

ANSWER.—The term "primary (acute) myocardial failure" should be limited to those circulation insufficiency crises in which loss of cardiac efficiency plays the leading part. In infectious disease it is usually the "heart failure with normal rhythm." The heart failure of diphtheria is the classic example of such a condition. It is characterized, as far as differential diagnosis is concerned, by a relatively greater fall in systolic blood pressure than in diastolic pressure, and by diminution in the volume and a muffling of the first heart sound. The most reliable index to the severity of the condition is the degree of diminution of the pulse pressure. The therapy of this condition should include absolute rest in the prone position without pillows, the patient not being permitted to sit up for any purpose whatever. He should be kept warm and quiet. He must be fed, not allowed to feed himself; the diet should be liquid and given in very small quantities; brandy may be added in small doses. If there is a tendency to emesis, the stomach should be kept empty and salt solution given by rectum or dextrose solution (from 10 to 20 cc. of 25 per cent) slowly infused into the vein. Dextrose candy might be the first food admitted by mouth as soon as the extreme emergency has passed. Cardiovascular pressor substances are the drugs that may be employed with the best hope of benefit in this condition. Pituitary (pitressin, 1 cc. intramuscularly every six hours) is probably the most valuable. Epinephrine is active but fleeting, and ephedrine insufficient when the patient's condition is bad, though it may be of value as a prophylactic, given every six hours (ephedrine sulphate 0.1 Gm.). The degenerated heart muscle does not respond to digitalis, and strychnine or atropine is of no value when the heart itself is affected. If there is a tendency to emesis, a stimulant such as aromatic spirit of ammonia (1 cc. in a wineglassful of hot water) may be given as frequently as required to overcome sinking spells and whip up the circulation until other remedies have had time to be absorbed. Oxygen may be of value if there is any sign of cyanosis.

In vascular collapse, the common cause of circulation failure in acute infections, it is not the heart that has failed but the musculature of the peripheral blood vessels. It is for this reason that, with the clinician, vasomotor drugs play such a great part in this condition. Strychnine in heroic doses (hypodermically up to 4 mg. every two hours) is the drug of first choice. If there is a tendency to stupor, caffeine sodiobenzoate (a 0.5 Gm. ampule every four hours, excepting at bedtime) is likely to be valuable; and, in the collapse of the crisis accompanied by a "leaky skin," atropine (1 mg. hypodermically) may be of special value. The cardiovascular pressure substances (pituitary, epinephrine) are likely to be of value here, possibly because of their vascular action and possibly also as a method of restorative therapy, for a part of the vascular failure may be due to febrile degeneration of the endocrine glands. Dextrose saline phleboclysis (drop by drop infusion) is indicated because of the decreased blood volume, the low blood chloride level, and the tendency to acidosis. Up to 3 liters of 10 per cent dextrose in saline solution may be given daily, unless a tendency to edema asserts itself. If the blood vessels are "leaky," 6 per cent acacia solution in saline solution, or blood transfusion in amounts not exceeding 500 cc., might be beneficial. If fluid in quantity can be given by mouth, infusions are contraindicated. Of course absolute rest in the head-low posture must also be enforced in this condition.

USE OF DEXTROSE IN CORONARY THROMBOSIS

To the Editor:—Please evaluate the use of dextrose in the treatment of coronary thrombosis, particularly as to time to begin the treatment, frequency of dosage, and statistical information as to the results. I am prejudiced against its use because some patients are so apprehensive of intravenous medication. Please omit name.

M.D., New York.

ANSWER.—In coronary thrombosis, the nature of the pathologic process and its normal involution preclude the proper evaluation of the results of most forms of therapy or a reliable statistical study of therapeutic results. Marvin has advocated the use of dextrose intravenously from the fifth to the twenty-first day. He has used from 10 to 50 cc. of the 50 per cent solution daily and has had gratifying results. Other clinicians begin its use earlier in some cases in smaller amounts or in larger amounts of a weaker concentration.

The objection to the use of intravenous therapy in an already apprehensive patient is a valid one, especially when what are probably equally good results may be obtained more easily.

When the blood supply to an area of heart muscle is diminished, it is hoped that by increasing the blood sugar concentration the deficiency of blood supply may be in part compensated for, and it is for this reason that dextrose is recommended. Dextrose given intravenously, however, is rapidly carried from the blood and stored or excreted. It may also increase the blood volume temporarily and so add to the load on the heart. If it is wished to raise the sugar intake, it may be done by a high carbohydrate diet or by adding sugar to the diet or in various forms to beverages.

Hypertonic dextrose solution is also given to relieve the passive congestion that may be a consequence of the cardiac damage, and for this it is effective. Equally good or better results may be obtained by the use of some one of the newer and less toxic mercurial diuretics, especially those combined with small doses of theophylline. These can be given intramuscularly with little or no discomfort, or even intravenously, with less disturbance.

TRAUMATIC ULCER OF DUODENUM

To the Editor:—I have recently observed a man—a stevedore—who while loading heavy cylinders on a car by means of wooden skids was struck on the epigastrium by a broken end of a skid. He became weak, left his work and after forty-eight hours was seen by me. He had had that morning a tarry stool. Investigation showed hemorrhage into the bowel and later a duodenal ulcer. Is it the consensus that such trauma to the abdomen may cause hemorrhage in a preexisting duodenal ulcer? Please omit name.

M.D., Washington.

ANSWER.—Traumatic ulcer of the duodenum is a problem that has interested internists for a good many years. Many clinicians believe that there is no such thing as chronic traumatic ulcer. Perhaps the best recent article on the subject, together with a discussion of the literature, is by Crohn and Gerendasy (THE JOURNAL, May 27, 1933, p. 1653). There is also a comprehensive review of the literature in the 1930 edition of Richard Stern's German textbook on the influence of trauma in producing visceral conditions. The medicolegal angle is particularly important because unwarranted claims can be made on this basis. A physician who was called as an expert witness to testify against an individual who claimed that his occupation, which was that of filing, produced a duodenal ulcer, recognized the name, when the papers were put in his hands, and was able to produce films of the man taken several years previous to his employment by the company in question, showing clearly that he had a duodenal ulcer at that time. This would be the only explanation for the ulcer phenomena that suddenly appear following an injury, because all experimental data show rapid healing of the normal mucosa when exposed to trauma. The criticism of nearly all cases of traumatic ulcer is to be found

in the fact that chronic peptic ulcer is notoriously latent at times. Most of the cases in the literature have no evidence particularly from a roentgenographic angle to show that previous ulceration did not exist. The correspondent should study the article by Crohn and Gerendasy and also the foreign references. Trauma can unquestionably excite hemorrhage in a previously existing chronic ulcer. This occurred in the case mentioned. In any event the literature mentioned is that most likely to yield the information.

ENDOCRINE DISTURBANCE

To the Editor:—Will you kindly suggest diagnosis and treatment of a woman, aged 21, single, who is subject to severe muscular spasms of the limbs, neck and body just twelve to twenty-four hours prior to the menstrual flow? The menses began at 14, occurred every two weeks, and lasted seven days. They continued in this manner until five years ago, when the flow continued for six weeks. A dilation and curettement was done, whereupon an improvement was noticed for several months. The menses then became painful at onset and the patient began to have a sense of constriction about the throat, with sudden attacks of dyspnea even during sleep. These attacks increased in frequency and severity and were not associated with the menses. Thyroidectomy was followed by some improvement, but all symptoms returned and became worse, the arm, leg, back and neck muscles being involved. During these attacks the body suddenly becomes rigid and the patient tosses about the bed, attempting to get her breath. The attacks last from one to two hours unless relieved by a hypodermic of morphine sulphate or anesthesia with ether. The tonsils have been removed. The fundus of the uterus is anteflexed but markedly retroverted. An attempt to correct the condition with a stem pessary gave no relief. The blood calcium is normal and Wassermann and Kahn tests are negative. Bromides and phenobarbital at times seem to decrease the severity of the attacks. The patient has shown no improvement in the past two years after having tried many doctors. Please omit name.

M.D., Pennsylvania.

ANSWER.—This is probably a case of endocrine disturbance. Despite the lack of information concerning the condition of the ovaries and relative to the character of the menstruation during the last five years, it would appear that genital disturbance is not the primary disorder; the chief lesion more likely concerns other endocrine glands.

In further search for the etiology of the patient's trouble the following may be considered: (1) roentgen examination of the sella turcica, (2) roentgen examination of the long bones and other search for parathyroid disturbance, (3) a basal metabolic rate determination, (4) search for a tuberculous focus, perhaps including roentgen examination of the lungs for the purpose of determining the likelihood of a lesion of the adrenal glands, and (5) an estimation of the hormones in the circulating blood (the estrogenic substance and the pituitary-like hormone), according to the technic of Robert Frank.

Despite the fact that the patient probably suffers from an organic lesion, the picture is atypical. A neurologic examination should be made to rule out with certainty the possibility of a purely functional disturbance.

LIPOMA AND TRAUMA

To the Editor:—Will you kindly give me any references you may have regarding the formation of a lipoma following an injury? I would also appreciate your opinion as to whether an injury of tissues would predispose toward lipoma formation.

GEORGE P. EDDY, M.D., Niagara Falls, N. Y.

ANSWER.—The relation of trauma to lipoma is discussed by Leila C. Knox (Trauma and Tumors, *Arch. Path.* **7**:274 [Feb.] 1929). The paragraphs in this article on lipoma are as follows: "Wurz (*Beitr. z. klin. Chir.* **26**:567, 1900) carefully analyzed the histories of twenty-eight patients with lipoma and concluded that only one of the tumors could be suspected of being a traumatic one. The patient, a woman, had sustained a fall in which the left side of the pelvis was seriously contused and she had suffered continuous pain in the buttock for a few weeks; then, on examination, a large lipoma, apparently actively growing, was found embedded in the fat. This tumor might be placed in the group of fat necroses described by Lee and Adair (*Ann. Surg.* **72**:188 [Aug.] 1920) and may have been only an instance of active regeneration and not of neoplastic growth or a preexisting tumor may have been rendered painful by the contusion. Siegfried Wolff believed four of his cases of lipoma to be traumatic. One of them followed a single injury. The others appeared on the shoulders following repeated contusions. Since this is so common a situation for lipoma, even in those whose occupations do not cause them to sustain injuries to the shoulders, its relationship to this trauma seems to be largely imaginary. Stern (Ueber traumatische Enstehung inneren Krankheiten, Jena, 1913, p. 487) studied this type of tumor and decided that it could not be in any way connected with an injury. Bosse and Lieschke (*Therap. Rundschau* **3**:433, 1909) believed that they had watched the origin of several cases of scrotal lipoma secondary to contusion, and Lieschke (Lipom und Trauma, dissertation, Berlin, 1911; quoted by Graef: *Centralbl. f. d. Grenzgeb. d. Med. u. Chir.* **17**:603, 1913) collected sixty-two cases in which he believed that there was possibly a traumatic origin. These tumors also were described before the frequency and nature of traumatic fat necrosis and regeneration were well understood." The following statement by James Ewing (Neoplastic Diseases, ed. 3, 1928, p. 197) seems to answer well the question whether injury may predispose to lipoma: "Trauma of many types has seemed to act as an exciting factor with many solitary superficial lipomas in subjects in whom a local or general predisposition must be assumed to exist."

TREATMENT OF EARLY SYPHILIS

To the Editor:—A girl, aged 16 years, married, came into my office with a general alopecia and one large ulcer located on the labia majora. She was anemic and weighed 90 pounds (41 Kg.). I made a clinical diagnosis of tertiary syphilis. Serologic tests were made, which confirmed the clinical diagnosis with four plus Wassermann and Kahn reactions. I gave her ten doses of neoarsphenamine intravenously, ranging in dosage from 0.3 to 0.45 Gm. The first three doses were 0.3 Gm. each, the remainder 0.45 Gm. When she had taken the sixth dose her hands and feet became dry, rough, scaly and cracked. The condition was confined to the palmar and plantar surfaces, which would bleed from cracks. I carried the fact in mind that I might have an arsenical dermatitis developing but did not withhold the neoarsphenamine treatment but gave her four more doses, which did not seem to aggravate the condition; at the same time she was taking the neoarsphenamine I gave her potassium iodide in 20 to 40 grain (1.3 to 2.6 Gm.) doses after meals and prescribed ordinary eczema treatment containing coal tar and avoided the use of water on her hands. The ulcer has gotten well and her hair is coming back thick, but her hands are about as described. I have started sodium bismuth thioglycollate intramuscularly. The patient feels much better and has gained about 15 to 20 pounds (7 to 9 Kg.) with the use of neoarsphenamine and she has had two doses of sodium bismuth thioglycollate. What do you think about the continued use of the heavy metal intramuscularly and what would you suggest as to the treatment of the hands and feet? I had intended to give fifteen or twenty doses of sodium bismuth thioglycollate. Please omit name.

M.D., Kentucky.

ANSWER.—It would seem that a labial ulcer with associated alopecia in a girl of 16 is more suggestive of a chancre than a "tertiary" lesion of syphilis. The amount of treatment given has been adequate thus far, but, as the inquirer recommends, a bismuth compound should be added to the therapeutic program at this time. The dermatitis on the hands might be an arsenical dermatitis of the so-called fixed eruption or a keratoderma palmaris et plantaris; the possibility of a fungous infection or a keratoderma blenorrhagica as a result of gonorrhea seems quite unlikely. Likewise, in view of the amount of treatment the patient has had it would be quite improbable that syphilis is the cause of the eruption on the hands and feet.

Now that it has been decided to give the patient a bismuth compound, it would be well to avoid arsphenamine for the time being. If the eruption tends to fade out during this interim, it would tend to support the diagnosis of arsenical eruption. On the other hand, if no material change is noted during the bismuth treatment the likelihood of a keratoderma must be considered. For this, hot water soaks for a half an hour each day, followed by the application of increasing strengths of salicylic acid ointment, would seem warranted, starting with a 3 to 5 per cent salicylic acid ointment and increasing according to the patient's tolerance.

LOW BLOOD SUGAR

To the Editor:—I should like to know of instances of extremely low blood sugars. What is the lowest that has been reported?

BEN HICKS METCALF, M.D., Ruskin, Fla.

ANSWER.—Complete absence of detectable sugar in the blood has been reported by Wagner and Parnas (*Ztschr. f. d. ges. exper. Med.* **25**:361, 1921).

Seale Harris (*Endocrinology* **16**:29 [Jan.-Feb.] 1932) has reviewed all the cases of spontaneous hypoglycemia that have appeared in the American and Canadian literature up to June 1931. Some more recent reports are as follows:

Rabinovitch, Jacob, and Barden, F. W.: *Am. J. M. Sc.* **184**: 494 (Oct.) 1932.

Bowen, B. D., and Beck, G. M.: *Ann. Int. Med.* **6**: 1412 (May) 1933.

Judd, E. S.; Kepler, E. J., and Rynearson, E. H.: *Am. J. Surg.* **24**: 345 (May) 1934.

Moore, Henry; O'Farrell, W. R., and Headon, M. F.: *Brit. M. J.* **1**: 225 (Feb. 10) 1934.

Zeckwer, Isolde T.: Hypoglycemia in Diabetes Associated with Obstruction of the Pancreatic Duct, *Arch. Int. Med.* **54**: 330 (Sept.) 1934.

AUTOINTOXICATION

To the Editor:—The subjects of systemic infection from the colon and the absorption of fecal toxins from the colon are of great interest and dissatisfaction to me. Papers in which therapy of a wide range of disease states is discussed often include the statement that "the bowels should be regulated" or "constipation combated." Often the recommendation is made that the colon be "cleaned out" by the use of purges or enemas. I assume that the mere fact of existence of the human race today should in itself offset the theory that fecal toxins are absorbed by the colon, thus providing the soil for the development of disease states, degenerative, chronic or acute. I assume further that biologic selective action has resulted in producing a human race that is more or less immune to or resistant to the process of absorbing bacteria and their toxins from the colonic wall. I wish to know the mechanism whereby catharsis is thought to be of value in the therapy of infectious disease states, when the specific causative organism is known, and which has no connection with the colon, near or remote, bacteriologically or anatomically. If absorption of toxins actually occurs from the contents of the colon, is there any evidence whatever that a colon cleaned out by catharsis or enemas is any the less potent as a source of systemic toxemia? Actually, is there any such disease state or entity as "intestinal toxemia" or "autointoxication?" If so, how are these states diagnosed? The conclusion is becoming rather fixed in my mind, as the result of my own experiences, that catharsis and enemas do not appreciably change the picture of the typical routine course of most systemic disturbances of whatever nature. It appears further to me that constipation is often the result of deficient water intake and that catharsis aggravates the deficiency. The proponents of the autointoxication theory have often impressed me by the vehemence of their assertions, but I should like to know of some carefully controlled unprejudiced research work to back up their dogmatic theories. Please omit name.

M.D.

ANSWER.—There is no well defined disease entity of "intestinal toxemia" or autointoxication. Even the concept of "biliousness," so definitely and eloquently described by our forefathers in medicine, has been abandoned. There is no carefully controlled unprejudiced research to substantiate the autointoxication theory. So far as we know, constipation is prone to produce mechanical and reflex disturbances rather than chemical injury. Patients with infectious diseases usually get along quite as well, if not better, without the customary "cleanout." There is no evidence that either cathartics or enemas make the colon contents less toxic.

CAUSE OF POSTOPERATIVE SHOCK

To the Editor:—R. A., a man, aged 23, came to my office with a history of abdominal pain in the right lower quadrant of four days' duration. Examination revealed typical symptoms of a perforated appendix. The temperature was 101 F., the leukocytes numbered 26,000 and polymorphonuclears were 83 per cent. Operation showed a ruptured appendix not localized, with free pus in the pelvis. The postoperative course for five days was apparently uneventful. Distention and vomiting appeared gradually, with an increase in temperature to 102. This was treated for a day by a continuous gastric tube and lavage hypodermoclysis of dextrose and saline solution as well as with ampoules of pitressin. This appeared to be of some help. Most of the distention disappeared and the patient had a good bowel movement. In two days the distention began again to appear, and the same procedure that had been used intermittently for the past two days was used continously that day. The patient appeared to be in good condition and had small bowel movements, mostly liquid, and distention appeared to be only moderate when a stomach tube and pitressin with adjuvant treatment was used. However, it was thought best not to delay and an ileostomy was performed, liberating a great deal of liquid and some gas. It was found that plastic adhesions of fibrin had formed about the intestine near the appendix, causing a partial obstruction. This was not treated at the time. Operation was done quickly with the least possible trauma and disturbance of the bowel. The patient was returned to the ward apparently in good condition but a few hours later appeared to go into deep shock. The temperature gradually rose, until twelve hours after operation it was 108. The pulse rate was 160 and respiration 32. The patient died at this time. The usual stimulants—pitressin, epinephrine, intravenous dextrose and saline solution—did not have the slightest effect. I have seen and had several similar cases. What is the cause of the profound cardiovascular collapse, which apparently does not respond at all to any stimulation. What is the cause of the excessive stimulation of the heat center? Would slow emptying of the intestine prevent the profound shock? What operative or other treatment would you suggest in the treatment of this type of case beyond possible earlier performance of an ileostomy? Kindly omit name and address.

M.D., New York.

ANSWER.—As stated, the condition described is observed not infrequently. No generally accepted explanation has ever been offered. It is likely that the cause of death is not the same in all instances. The anesthetic that was used during the performance of the ileostomy is not stated. There is evidence that a person who is profoundly sick withstands spinal anesthesia very poorly. Circulatory collapse is apt to follow the giving of the usual amount of the anesthetic into the spinal canal. The use of large quantities of drugs that produce vasoconstriction, such as epinephrine, may in itself produce acute circulatory failure. It is not likely that slow emptying of the intestine would have prevented the profound shock. As suggested, the earlier performance of an ileostomy might have been of help. The employment of repeated small transfusions of blood in place of the using of vasoconstrictor drugs and of intravenous salt solution might have been of benefit.

In summary, no entirely adequate explanation for the condition described is available at the present time.

USE OF HEARING DEVICES

To the Editor:—I would appreciate information as to the latest instrument to aid nerve deafness, the price if possible and where I can obtain it. If there is more than one new model, let me know about it. Mention only the ones that have proved a success.

L. A. COLEMAN, M.D., Salisbury, N. C.

ANSWER.—Electrical hearing devices are often of considerable aid in cases of middle ear or conduction apparatus impairment but are of slight and sometimes no benefit when marked impairment of the auditory nerve or perception apparatus is present. It is difficult to say which is the latest instrument, but there are several excellent ones on the market. Among them are the Audiphone, manufactured by the Western Electric Company; the Sonotone, produced by the Sonotone Corporation; the Acousticon, made by the Acousticon Corporation, and the Fortiphone, distributed in this country by Mager and Gouggelmann. Some of them, especially when supplied with a bone conduction attachment, are expensive. In many instances one type of instrument will give better results than another, so that the individual should test a number of these instruments of various makes in order to decide in his case which gives the greater amplification and is best suited for his own particular ears. One cannot say that any one instrument has proved a greater success than another, because of the personal element just mentioned.

CHRONIC ANKYLOSIS AFTER ARTHRITIS

To the Editor:—A man, aged 36, has ankylosis of the right knee from chronic gonorrheal arthritis. At present he is wearing a walking caliper. What do you consider the most effective of the following: bacteriophage, gonococcus vaccine (stock vaccine), milk products or intravenous products? The acute gonorrheal urethritis occurred about twenty years ago. He has had ankylosis for three years. Please omit name.

M.D., Ohio.

ANSWER.—If the patient has had ankylosis of the right knee for three years, there seems to be no indication for the products mentioned. The only curative measure now is arthroplasty, which is a highly technical operation and must be done by a surgeon skilled in that type of operating.

In regard to the various products mentioned, one might parenthetically state that it is not so much the product used as the knowledge and experience in the use of each one that spells success or failure.

LACERATION OF SPLENIC ARTERY

To the Editor:—Please send me information on the present authentic method of treating a lacerated splenic artery. What is the recognized method in surgery today? Please omit name.

M.D., New York.

ANSWER.—A torn or lacerated splenic artery will usually result in extensive intra-abdominal hemorrhage. An emergency operation with ligation of the splenic artery and vein with splenectomy is the procedure of choice; otherwise, even if bleeding has stopped, a delayed hemorrhage may occur.

When hemorrhage is excessive and the patient will not stand the shock of splenectomy, a large gauze pack may be introduced to control the bleeding and gradually removed after a few days. This does not so satisfactorily control the hemorrhage, and infection may result through the wound.

MANGANESE IN DIET

To the Editor:—Is the element manganese now generally considered to be essential in the human diet? If so, what is its function and is the daily requirement known? Has there been any work published on the subject since that of McCollum? Kindly omit name if this is printed in THE JOURNAL.

M.D., Wisconsin.

ANSWER.—There is no evidence at hand which would indicate that the element manganese is essential in the human diet. The work from the laboratory of McCollum at Johns Hopkins University and from Hart's laboratory at the University of Wisconsin would indicate that the absence of manganese in the diet of the rat leads to loss of fertility. There is no evidence, however, that the average human diet is lacking in the element manganese.

Medical Examinations and Licensure

COMING EXAMINATIONS

ALABAMA: Montgomery, June 24-26. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD OF PEDIATRICS: St. Louis, Nov. 19. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

ARIZONA: Phoenix, July 2. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

CALIFORNIA: San Francisco, July 8-11 and Los Angeles, July 22-25. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 2. Sec., Dr. Harvey W. Snyder, 422 State Office Bldg., Denver.

CONNECTICUT: Hartford, July 9-10. *Endorsement.* Hartford, July 23. Sec., Medical Examining Board, Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

DISTRICT OF COLUMBIA: Washington, July 8-9. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

HAWAII: Honolulu, July 8-11. Sec., Dr. James A. Morgan, 48 Young Bldg., Honolulu.

ILLINOIS: Chicago, June 25-28. Address, Department of Registration and Education, Springfield.

INDIANA: Indianapolis, June 25-27. Sec., Board of Medical Registration and Examination, Dr. William R. Davidson, Room 5 State House Annex, Indianapolis.

MAINE: Augusta, July 2-3. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, July 9-11. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413 State House, Boston.

MISSISSIPPI: Jackson, June 25-26. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examination will be held in all centers where there are class A medical schools and five or more candidates desiring to take the examination, June 24-26 and Sept. 16-18. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEVADA: Reno, Aug. 5. Sec., Dr. Edward E. Hamer, Carson City.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 24-27. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. 3d St., Grand Forks.

PENNSYLVANIA: *Written.* Philadelphia and Pittsburgh, July 9-11. *Bedside.* Philadelphia, July 12-13. Dir., Bureau of Professional Licensing, Mr. W. M. Denison, 400 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, July 2-3. Dir., Department of Public Health, Dr. E. A. McLaughlin, 319 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 25. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: Rapid City, July 16-17. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

UTAH: Salt Lake City, July 8-10. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 26-28. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.

WASHINGTON: *Basic Science.* Seattle, July 11-12. *Medical.* Seattle, July 15-17. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Clarksburg, July 8. State Health Commissioner, Dr. Arthur E. McClue, Charleston.

WISCONSIN: Milwaukee, June 25-28. Sec., Dr. Robert E. Flynn, 401 Main St., LaCrosse.

Pennsylvania January Examination

Mr. W. M. Denison, director, Bureau of Professional Licensing, reports the examination held in Philadelphia, Jan. 8-12, 1935. Forty-seven candidates were examined, all of whom passed. The following schools were represented:

School	PASSED	Year Grad.	Number Passed
George Washington University School of Medicine		(1933)	1
Georgetown University School of Medicine		(1933)	1
Howard University College of Medicine		(1933)	1
Emory University School of Medicine		(1927)	1
Northwestern University Medical School		(1934)	1
University of Kansas School of Medicine		(1933)	1
Harvard University Medical School		(1931), (1932)	2
University of Michigan Medical School		(1932)	1
Wayne University College of Medicine		(1934)	1
St. Louis University School of Medicine		(1933)	1
Long Island College of Medicine		(1932)	1
Syracuse University College of Medicine		(1933)	1
Hahnemann Med. Col. and Hosp. of Philadelphia		(1930), (1933, 2)	3
Jefferson Medical College of Philadelphia		(1931), (1933, 4)	5
Temple University School of Medicine		(1933, 3)	3
Univ. of Pennsylvania School of Medicine		(1932, 8), (1933, 4)	12
University of Pittsburgh School of Medicine		(1933, 2)	2
Woman's Medical College of Pennsylvania		(1933, 2)	2
University of Toronto Faculty of Medicine		(1932)	1
Hessische Ludwigs-Universität Medizinische Fakultät, Giessen, Germany		(1911)*	1
Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest		(1929)*	1
Licentiate of the Royal College of Physicians of Ireland and of the Royal College of Surgeons in Ireland		(1930)	1
Licentiate of the Royal College of Physicians, of the Royal College of Surgeons, Edinburgh, and of the Royal Faculty of Physicians and Surgeons, Glasgow		(1933, 2)	2
School of Medicine of the Royal Colleges, Edinburgh		(1933)*	1

* Verification of graduation in process.

Missouri Reciprocity and Endorsement Report

Dr. E. T. McGaugh, state health commissioner, reports 12 physicians licensed by reciprocity and one physician licensed by endorsement at the meetings held in Jefferson City, Jan. 21 and Feb. 7, 1935. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1933)	Arkansas
Hahnemann Medical College and Hospital, Chicago		(1901)	Nebraska
Indiana University School of Medicine		(1926)	Indiana
University of Kansas School of Medicine		(1929)	Kansas
University of Louisville School of Medicine		(1924) (1934)	Kentucky Virginia,
Tufts College Medical School		(1929)	Mass.
Creighton University School of Medicine		(1929)	Oklahoma
University of Cincinnati College of Medicine		(1933)	Ohio
Meharry Medical College		(1932)	Tennessee
University of Tennessee College of Medicine		(1932)	Tennessee
Baylor University College of Medicine		(1932)	N. Dakota

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
St. Louis University School of Medicine		(1933)	N.B.M.Ex.

Wyoming February Report

Dr. W. H. Hassed, secretary, Wyoming State Board of Medical Examiners, reports the written examination held in Cheyenne, Feb. 4, 1935. The examination covered 14 subjects. An average of 75 per cent was required to pass. Two candidates were examined, both of whom passed. Three applicants were licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1934)	75
St. Louis University School of Medicine		(1933)	86

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
State University of Iowa College of Medicine		(1929)	Iowa
University of Oregon Medical School		(1933)	California
Osteopath *			Colorado

* Licensed to practice osteopathy and surgery.

Book Notices

New and Nonofficial Remedies, 1935. Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1935. Cloth. Price, $1.50. Pp. 510. Chicago: American Medical Association, 1935.

In this book the Council on Pharmacy and Chemistry lists and describes the medicinal preparations that it has found acceptable for general use by the medical profession. A glance at the list of the Council members and the long list of consultants appearing in the first part of the book gives ample warrant for the authority of the Council's selections.

Not only does the Council "accept" new preparations but from time to time it omits those which have been accepted but which have not with the lapse of time upheld their original promise of therapeutic merit. The list of omissions for 1934 shows that the Council has been mainly concerned in this respect with B. acidophilus preparations and with antiseptics. Several preparations of each class have been omitted. The list of admissions does not reveal the presence of any preparation that promises to be epoch making in the sense that insulin was, for instance. However, the following newly accepted preparations are noteworthy; Carbarsone, an arsenical used chiefly in the treatment of amebiasis (the Council published a special report on this drug, supplementing the preliminary report of 1932); Hippuran and Diodrast, two different types of urographic contrast mediums: Carotene, the precursor of vitamin A; Dilaudid, a substitute for morphine; Neo-Synephrin Hydrochloride, which has a number of advantages as a vasoconstrictor over synephrin tartrate; and Diothane, which represents a type of local anesthetic entirely different chemically from any heretofore accepted for N. N. R.

The description of products containing vitamins A and/or D have been revised to give the potencies in terms of the recently adopted pharmacopeial units, thus bringing some measure of uniformity into this heretofore chaotic field. No doubt the book will be revised next year to conform with the new Pharmacopeia in its entirety.

A valuable feature of the book is the grouping of preparations in classes. Each of these is introduced by a general discussion of the group. Thus the silver preparations, the iodine preparations, the arsenic preparations, the animal organ preparations and the biologic products are each preceded by a general discussion of the particular group. These general articles compare the value of the products included in the group with similar pharmacopeial and other established drugs which it is proposed that these proprietary preparations shall supplement or supplant.

Physicians who wish to know why a given proprietary is not described in New and Nonofficial Remedies will find the "Bibliographical Index to Proprietary and Unofficial Articles not Included in N. N. R." of much value. In this section (in the back of the book) are given references to published articles dealing with preparations that have not been accepted. These include references to the Reports of the Council, to Reports of the A. M. A. Chemical Laboratory and to articles that have appeared in THE JOURNAL.

Psychology and Health. By H. Banister, M.Sc., Ph.D., Director of Psychological Studies in St. John's College, Cambridge. Cloth. Price, $2.50. Pp. 256. New York: The Macmillan Company; Cambridge, England: The University Press, 1935.

It has been a problem to find a book dealing with all of psychotherapy which could be used in classes or groups for social workers and nonspecializing physicians, but after reading the present volume the problem would seem to be at least temporarily solved. While the author is not a medical man, his grasp of the subject from all standpoints is unusually effective, particularly in view of the fact that his work is being done in England, where child guidance and mental hygiene are not stressed to the same degree to which they are in this country. One of the features that have invalidated so many of the books dealing with psychotherapy in the past has been the fact that short chapters usually fail to give a comprehensive and accurate point of view of each subject treated. For instance, the usual book on abnormal psychology might devote a chapter to the freudian psychology but when the reader has finished with it he has only the idea that Freud has a point of view which is linked up with sex, which point of view has little to do with his own problems in life. Banister, however, has devoted chapters to the freudian and adlerian concepts as well as to those of Janet and Jung, which are so simply written yet so full of valuable material that they might easily be read by the layman to his benefit and not to his bewilderment. In addition, the present volume is the first one that deals in a simple manner with the problems specifically facing the medical man. Of course, each of the subjects to which a chapter has been devoted can be studied more completely in the literature, and to some, such as invalidism, mental deficiency, suggestion, hypnosis, conversion hysteria, anxiety states, compulsions and obsessions, whole monographs have been devoted. While the chapter on the problem child and that dealing with infantile sexuality concern themselves with these subjects only from the point of view of a few small cases rather than with a general attempt to cover the whole field, the presentation should nevertheless reveal to the physician who is not actively engaged in psychiatry the fact that some technical approaches to these fields exist. The book concludes with several chapters on psychologic treatment, and, since three chapters in the middle of the book deal with the relationship of mental hygiene to physical ailments, it might be well for the physician who is interested in the mental sphere of medicine, even though he is not a psychiatrist, to know that this book is in existence.

The Herrmannsdorfer-Sauerbruch Diet. By Robert Wollheim and Walter H. Schauinsland, Ph.D. With a foreword by Joseph Alexander, M.D. Paper. Price, $1. Pp. 64. New York: Professional Scientific Service, 1935.

Considerable emphasis has been placed on the diet in the treatment of tuberculosis since the days of Hippocrates. During the centuries, numerous advocates of various diets have appeared, only to disappear without leaving anything of value in the treatment of tuberculosis. There is no question that diet is essential in the treatment of any chronic disease. However, it must be kept under the control of the dietitians and the physicians and out of the hands of the faddists. When properly used in conjunction with other forms of treatment, such as Wollheim and Schauinsland prescribe, it is capable of producing beneficial results in properly selected cases. The Gerson salt-free diet in the treatment of tuberculosis was introduced in 1923. Two years later, Sauerbruch and Herrmannsdorfer employed this diet but concluded that some changes were necessary, and this volume is a discussion of their modification. The diet has been found of most value in cases of tuberculosis of the skin. However, they also believe it to be of considerable value in tuberculosis of the bones and joints, genito-urinary tract, and lymph nodes. They also observe considerable improvement in some cases of pulmonary tuberculosis. Considerable space is given to the mechanism of the diet, and attention is called to the fact that it is not definitely understood because its underlying principles involve the whole field of body chemistry. One chapter, entitled "Notes for Physicians," calls attention to the importance of the general supervision of the treatment, characteristics of the diet, food element intake, fluid intake, medication and accessory therapies. In this chapter it is obvious that the authors do not depend on the diet alone in the treatment of tuberculosis. In other chapters, such subjects as application of the diet, dietary rules, prohibited foods and notes for dietitians are discussed. The appendix, which outlines the daily food schedule and calls attention to the differences between the Herrmannsdorfer-Sauerbruch and the Gerson diets, is very useful. Some space is given to recipes and to menus.

Personal Hygiene Applied. By Jesse Feiring Williams, A.B., M.D., Professor of Physical Education, Teachers College, Columbia University. Fifth edition. Cloth. Price, $2.25. Pp. 529, with 145 illustrations. Philadelphia & London: W. B. Saunders Company, 1934.

This book in its four earlier editions has deservedly been one of the most popular in the field of college hygiene. Interest is stimulated at the outset by a philosophical discussion of health and is sustained throughout the book by well chosen and exceptionally readable subject matter. In this as in most books there are some points to which exception might be taken. For example, there is what seems to be an undue emphasis on exercise as a health measure, and an unjustified prominence given to outdoor air and vaccines in the treatment of tuberculosis. Then, too, some of the statements concerning communicable diseases need revision. These are based on American Public Health Association standards of 1917, when the statement that there is no immunization against scarlet fever was correct. Such minor inaccuracies, however, become inconspicuous in comparison to the soundness of the general ideas and the great mass of specific information presented. The claims of thorough revision are apparently based on the omission of the sections on Christian science, chiropractic and osteopathy, the bringing down to date of several statistical tables, the revision of a few paragraphs, and the addition of a little new material. Possibly 2 or 3 per cent of the total subject matter is revised. This relatively little change from the previous edition, however, is no reflection on the quality of the book, which should continue to be useful for the instruction of college students on the subject of personal hygiene.

Clinical Laboratory Methods and Diagnosis: A Textbook on Laboratory Procedures with Their Interpretation. By R. B. H. Gradwohl, M.D., Director of the Gradwohl Laboratories, St. Louis. Cloth. Price, $8.50. Pp. 1028, with 352 illustrations. St. Louis: C. V. Mosby Company, 1935.

This book heralds the return of the larger and more comprehensive textbooks on clinical laboratory methods. For some time most of the current books on the subject have been concise treatises devoted particularly to interpretation of laboratory procedures. In this book the standard technic of accepted procedures is given in the strictest detail together with an interpretation of all data obtained by standard tests. The usual subjects of clinical laboratory methods are covered comprehensively. The chapters on hematology, bacteriology, parasitology and exotic pathology are, however, noteworthy in volume and completeness. An unusual chapter for a book of this type is a concise but adequate discussion of postmortem examinations. The text has been carefully edited and the illustrations are used to good advantage. The colored illustrations are particularly well done and greatly enhance the value of the descriptive

material. The technic of the various laboratory procedures is clearly described in a step by step manner, so that even the novice will have no difficulty in carrying them out. The reader will find this book an unusually rich source of information on clinical laboratory procedures. Many valuable points and modifications of standard procedures are given that greatly facilitate otherwise laborious methods. The author is well qualified both by actual experience and by long years of teaching this subject to anticipate and supply useful data that are seldom found under one cover. As with most first editions, certain chapters have received undue emphasis; but this does not impair the general value of the book. The clinician and laboratory worker will find the book of the greatest value. It is questionable whether the general organization and manner of presentation lend themselves suitably in a textbook for the medical student on laboratory diagnosis as the courses are ordinarily arranged in the medical curriculum. Nevertheless the book is an unusually complete work on clinical laboratory methods and their interpretation and is a fertile source of information.

Les migraines: Etude pathogénique, clinique et thérapeutique. Par Pasteur Vallery-Radot, professeur agrégé á la Faculté de médecine de Paris, et Jean Hamburger, interne des hôpitaux. Avec la collaboration de P. Blamoutier. Paper. Price, 45 francs. Pp. 231, with 4 illustrations. Paris: Masson & Cie, 1935.

This book closely resembles in its appearance and system of handling the various divisions of the subject in the monograph on urticaria written by Pasteur Vallery-Radot and Lucien Rouques in 1930. After a brief historical introduction there is an excellent description of the various forms of migraine, including ophthalmic, simple, associated and certain unusual forms. This is followed by a long chapter on the pathogenesis in which various theories, such as spasms of cerebral blood vessels and sympathetic irritation, are discussed. The next chapter deals with studies of the blood and biologic researches, both during and between attacks. The fifth chapter treats the etiologic factors. After discussing heredity and endocrinology in relation to migraine, the authors spend considerable time on biliary migraine, which, they believe, is an extremely common form of migraine and for which they prescribe quite enthusiastically repeated duodenal drainage after the fashion of Lyon. The authors are lukewarm toward the American idea that allergic or, as they call it, "anaphylactic," migraine is an important group. In their experience true allergic migraine is rare and they discuss at length the poor results obtained by the American investigators in connection with skin tests. They believe that the good results obtained in some cases by dietary manipulation is due, for the most part, to a lessening of biliary and hepatic infections, although they admit that there are some cases of true allergic hypersensitivity to one or more foods. There is a rather extensive chapter on the relationship between migraine and epilepsy. The chapter on the treatment of migraine is surprisingly small and adds nothing to our knowledge, except for its emphasis on repeated duodenal lavage. The book is well written, the description of attacks is exceptional, the headings are clear and the discussions are easily understandable. The tone of the book is quite conservative and the authors take great exception to some of the more radical reports, especially those emanating from certain American investigators.

Diabetes Mellitus and Obesity. By Garfield G. Duncan, M.D., C.M., Associate in Medicine in the Jefferson Medical College, Philadelphia. With an introduction by Thomas McCrae, M.D., Professor of Medicine in the Jefferson Medical College. Cloth. Price, $2.75. Pp. 215, with 9 illustrations. Philadelphia: Lea & Febiger, 1935.

This small volume contains an excellent summary of the practical essentials necessary for the proper handling of the diabetic and the obese patient. The author adheres to the Allen and Joslin dietary formulas, but his discussion is sufficiently broad to make the book useful to those desiring to use any other dietary regimen. The work is to be commended for its concern with the individual variability of the patient and its completeness as regards the inclusion of the various vicissitudes that require some modification of routine therapy. Many illustrative examples, and tables of food values, are included. The desire for brevity has admittedly rendered the theoretical discussion somewhat dogmatic. Because of the fact also that this discussion is rather conservative in tone, one can hardly recommend the volume as a good source of present-day theory. However, the theory given is adequate for its intended purpose; namely, as a background for the practical considerations. And any shortcomings in this respect are far outweighed by the evident experience and common sense which the author brings to bear on his subject.

Fracastor Syphilis or the French Disease. A Poem in Latin Hexameters. By Girolamo Fracastoro. With a translation, notes, and appendix. By Heneage Wynne-Finch, M.A., and an introduction by James Johnston Abraham, C.B.E., D.S.O., M.A. Cloth. Price, 10/6. Pp. 253, with 10 illustrations. London: William Heinemann, Ltd., 1935.

This gives first a brief and interesting account of the history of syphilis and a particularly attractive sketch of the life of Fracastor. Fracastor is one of those men whose name by a trick of history has been immortalized through its association with a great fact. Fracastor suggested the name syphilis, which physicians took up with eagerness for a disease that they could not before better describe than by laying the disease on their neighbors. The name syphilis, which was first used in his famous poem, has held ever since. But in a way this was not altogether fortunate for Fracastor, because it has led the world to overlook that he was one of the foremost men of his time. In a period of great men he was not only one of the most penetrating students of syphilis but was centuries ahead of his time in his insight into the origin of contagions and had a greater claim to fame in that he first clearly suggested the microbic origin of contagious diseases. Before Gallileo he tried using compound lenses for making a telescope for viewing the heavens. And he was a Latin poet of such distinction that he had the praise of Bacon, Pope and Hallam. As Wynne-Finch says of his verse, "It is not too much to say that he was an almost perfect writer of the hexameter; proving, as Virgil had done before him, how delightful and varied a melody it was capable of in the hands of a master." In short, Fracastor is worth knowing, and there is no place where knowledge of him can be gotten more easily than in this work.

But the main value of the book lies in the translation of "The Syphilis." The translator has wisely avoided the temptation to put it in verse, but he has put it into beautiful poetic prose. He has attained the rare achievement of giving the spirit as well as the substance of the poem. Take the following, chosen almost at random: "Urania, thou knowest the causes of things, thou knowest the stars and the manifold motions of the heavens and the shores of the sky; . . . Grant me thy presence, and sport with me in the peaceful shade, whilst soft breezes whisper and the myrtle woods answer my song and Benacus resounds from his hollow caverns. Tell me, Goddess, what causes after so many ages brought forth for us this unaccustomed disease? Was it borne by the Western Sea, and so came to our world at the time when a chosen band set sail from the shores of Spain, and dared to attack the foam and the unknown waters of the wandering ocean and search out lands lying in a new world?"

The present translation is a delight.

A Diabetic Guide Written Primarily for the Doctor's Patient and with Suggestions to the Doctor for Assisting Him. By Samuel Evans Massengill, M.D. Third edition. Cloth. Price, $2. Pp. 214, with illustrations. Bristol, Tenn.: S. E. Massengill Company, 1934.

The problem of successfully treating diabetes primarily involves teaching the patient to care for himself. The help of the physician is indispensable at times of emergencies, if and when these arise, but the patient must learn the day to day management if he is to do as well as he ought to do. The numerous manuals, primers and guides that have appeared in recent years bear witness to the general acceptance of this principle. Dr. Massengill in preparing his guide has followed the general plan of earlier books of this nature, covering the material in a manner that is readily intelligible to the layman. Food tables and recipes are included. A chapter is taken up with brief notes on various complications of diabetes, and such subjects as marriage, sleep, tobacco and vacations. The author adheres to the diet plan advocated by those who believe in moderate restriction of carbohydrate and the supplying of enough fat to provide the calories required by the individual. Alcohol is found useful sometimes to increase appetite and has a place in rendering more comfortable the disturbances of chronic disease and old age. The procedure advocated is sound; the book is well written and it can safely be recommended.

Corrective Rhinoplastic Surgery. By Joseph Safian, M.D., Attending Plastic Surgeon, Sydenham Hospital, New York City. Cloth. Price, $9. Pp. 218, with 242 illustrations by Joseph Tamerin, M.D. New York: Paul B. Hoeber, Inc., 1935.

In his introduction the author defines the scope of his book as embracing "types of nasal deformity commonly met with in times of peace, with congenital enlargement of the entire nose or any of its component parts, and with congenital or traumatic deficiencies and displacements." He has succeeded in presenting the subject in a clear and graphic manner. The technic of most of the procedures follows that described by Joseph, who is given full credit. Certain innovations and modifications suggested by the author are timely and helpful. The text is sufficiently detailed on all phases of the subject matter with the possible exception of the chapter on nasal fractures, which might have been given a little more extensive discussion in view of its importance. The chapter on saddle nose, on the other hand, is particularly thorough and leaves nothing to be desired. The author is eminently fair in his estimate of the type of operation best suited to the different varieties of saddle nose and reflects the best opinions of the day. The illustrations and drawings bring out certain details of technic that are more or less obscure in most books on this subject. While it is true that one cannot become a plastic surgeon merely by the reading of books, it is also true that the surgeon with a knowledge of fundamentals and only a limited experience can be enormously assisted in carrying out heretofore unfamiliar procedures. This excellent work merits the enthusiastic reception not only of those who are doing this type of work exclusively but of rhinologic surgeons in general.

Growth and Development of the Young Child. By Winifred Rand, A.B., R.N., Specialist in Parental Education at the Merrill-Palmer School, Detroit, Mary E. Sweeny, M.S., M.A., Nutritionist at the Merrill-Palmer School, Detroit, and E. Lee Vincent, Ph.D., Psychologist at the Merrill-Palmer School, Detroit. Second edition. Cloth. Price, $2.75. Pp. 429, with 57 illustrations. Philadelphia & London: W. B. Saunders Company, 1934.

Many of the difficulties in the growth and development of children are directly traceable to maladjustments in family life. It is also true that antepartum care has a profound influence on postnatal growth and development. Nevertheless, such knowledge as is available at the present time concerning these matters is not as widely applied as it should be. Knowledge alone is of no value unless that knowledge is actually used in the antepartum care of the mother and in the guidance of the child during the first years of life, when his character is being formed. It is to supply this need for a simple but scientific presentation of antepartum care and the postnatal care of the child that this book was written. In the present edition have been included newly learned facts concerning the endocrine glands, new observations on growth during infancy and childhood, and the important advances made in feeding and nutrition. A chapter has been included on biologic development. Questions and exercises have been appended to each chapter to aid in the use of this book for teaching purposes. Teachers, students of child care, and parents all will find this book full of valuable material.

A Survey of Industrial Mental Hygiene. Compiled under the auspices of the School of Medicine, University of Pittsburgh, by C. H. Henninger, M.D., T. M. T. McKennan, M.D., and Samuel C. Gomory, M.D. Paper. Pp. 140. Pittsburgh, 1934.

This is a volume consisting of numerous tabulations in which the relationship of mental disorders and physical disorders to industry is brought out. There are two points of view, one treating of the psychiatric diagnosis in relation to the types of occupation, and the second, a number of chapters reversing the process and showing the kinds of body injuries and mental symptoms that are related to physical defects, industrial accidents, compensation cases and industrial poisons. There is a part of a chapter dealing with mental symptoms in industrial poisoning. The chapters on mental deficiency in industry, and neuroses and psychoses, consist largely of paragraphs defining the conditions and showing, in one sentence, the limitations of workers who are suffering from these diseases. A number of interesting points can be culled by an earnest perusal, but as a rule the material is too specific to be inspiring. For one who is interested in industrial medicine, the volume should be of great interest; but, since nothing new in the way of treatment or analysis of industrial cases along mental hygiene lines has been developed, this work would seem to serve the general practitioner and psychiatrists to only a limited extent.

A Synopsis of Surgical Anatomy. By Alexander Lee McGregor, M.Ch., F.R.C.S., Lecturer on Surgical Anatomy, University of the Witwatersrand. With a foreword by Sir Harold J. Stiles, K.B.E., F.R.C.S. Second edition. Cloth. Price, $6. Pp. 644, with 639 illustrations. Baltimore: William Wood & Company, 1934.

Those who are not familiar with this textbook will find it one of the most originally conceived and written works of its kind. The author originally intended it as a compilation of anatomic facts of practical value for the senior student and practitioner. He made no pretense at completeness but endeavored to present in outline essay form discussions complete in themselves on important anatomic subjects. It is well illustrated with original and comprehensive diagrams. The plan is to present briefly the surgical anatomy of the normal and the abnormal. The book exemplifies the painstaking effort of a surgeon who desires to develop a concise and instructive epitome of surgical anatomy. It is highly recommended to the student and the practitioner who desire to relate the principal anatomic facts to their practical application in surgery.

Curso práctico de fisiología. Por los Doctores Alejandro Lipschütz, profesor de fisiología de la Universidad de Concepción, Chile, y Jaime Pi-Suñer Bayo, del Instituto de fisiología de Barcelona. Tomo I: Bioquímica y fisiología general. Tomo II: Movimientos secreciones y psicofisiología. Paper. Price, 25 pesetas, each. Pp. 235, with 63 illustrations; 245, with 149 illustrations. Madrid: Javier Morata, 1934-1935.

This extensive laboratory manual provides directions for a combined practical course in physiologic chemistry and physiology. Most of the conventional material in both branches is described in an understandable way, and a great deal of explanatory material not immediately related to practical exercises is included. There is a commendable emphasis on the physicochemical aspects of biochemistry. A good deal of attention is paid to experiments on the glands of internal secretion, including exact descriptions of experiments on the gonads, in which field one of the authors has done a good deal of original investigation. The work as a whole suffers greatly from the absence of references to the original literature, although a great many names of investigators are mentioned. The large number of illustrations greatly enhances the value of the work to students, and the inclusion of a considerable amount of discussion and collateral information makes the work an auxiliary textbook as well as a laboratory manual. It can serve as a useful basis for the fundamental training of medical students in the Latin American countries.

The Autonomic Diseases or the Rheumatic Syndrome. By T. M. Rivers, M.D. Cloth. Price, $3. Pp. 299. Philadelphia: Dorrance & Company, Inc., 1934.

In the study of the etiology of such diseases as arthritis, the common cold, asthma and hay fever there is often a need for stretching one's imagination over a long range between cause and effect. Many times these distances are vague and too often blank. It is difficult to appreciate the relation between cause and effect. The author has therefore attempted to group the diseases that result from action of the causative agents through the autonomic nervous system. Since diseases of this class are productive of the greatest economic loss and suffering, any stimulating thought should be welcomed. The book, however, must be read critically and theory must always be dissociated from fact.

General Ophthalmology: A Short Treatise for Students and Practitioners. By S. A. Agatston, M.D., F.A.C.S., Assistant Clinical Professor of Ophthalmology at the New York University Bellevue Hospital Medical School. Cloth. Price, $2. Pp. 176. New York: The Author, 1935.

This pocket size volume is a quiz compend type of outline covering the field of ophthalmology. It has no illustrations. Of necessity such a work cannot give a comprehensive discussion on any phase of the subject and can only serve as a guide for review in preparation for such examinations as are given by state boards or to applicants for internships. In our opinion, it is too brief and condensed to serve as a textbook for the teaching of ophthalmology.

Medicolegal

Malpractice: Physician's Liability Not Removed by Award Under Workmen's Compensation Act.—The plaintiff was injured in the course of his employment. He himself employed and paid the defendant, a physician, to treat him. The injured workman, the insurance carrier, and the industrial commission effected a settlement of the workman's claim under the workmen's compensation act. The physician-defendant was not a party to the settlement, nor, since he had been employed and paid by the workman, was he in privity with the employer, on whose behalf the insurance carrier acted. Nevertheless, when his former patient instituted suit against him he pleaded that in the settlement the plaintiff, his patient, received compensation for all his injuries, including the injury alleged to have resulted from the defendant's treatment. In the district court, Wells County, the plaintiff's suit was dismissed, and he then appealed to the Supreme Court of Colorado.

The question is, said the Supreme Court, whether the settlement under the workmen's compensation act may be invoked by the physician-defendant in absolution of the charge of malpractice against him. The purpose of the appeal was solely to determine the law governing the case. If that should be decided in favor of the plaintiff, the physician-defendant could then be called on to answer to the charge of malpractice.

The liability of a tort feasor—such as a physician guilty of malpractice—is predicated on fault; the liability of an employer under the workmen's compensation act is predicated on relationship. What the plaintiff received from or through his employer under the workmen's compensation act was paid because of that relationship. What he seeks to recover from the physician-defendant is based on the latter's alleged fault. To the workmen's compensation act the physician-defendant was a stranger; an outsider does not share the burdens of that act which are imposed on an employer, nor is he entitled to its benefits. The Supreme Court quoted from *Ruth* v. *Witherspoon-Englar Co.*, 98 Kan. 179, 157 P. 403, with approval, as follows:

> Even if circumstances had been shown sufficient to charge the defendant with responsibility for the fault of the physicians, the rule would not be altered; for liability under the compensation act cannot be made to depend upon the degree of care exercised. A part of the loss occasioned by an accidental injury to a workman is cast upon the employer, not as reparation for wrongdoing, but on the theory that it should be treated as a part of the ordinary expense of operation. So much of an employee's incapacity as is the direct result of unskilful medical treatment does not arise "out of and in the course of his employment" within the meaning of that phrase as used in the statute. . . . For that part of his injury his remedy is against the persons answerable therefor under the general law of negligence, whether or not his employer be of the number.

To deny a remedy to the victim of malpractice simply because he has received compensation under the statute would be fraught with potential ill being. By the common law a physician or surgeon is beholden for injury to his patient resulting from malpractice. The court found no evidence to show that the legislature had abrogated the common law remedy and held that "to allow orthodox determination is only just to plaintiff and is not unfair to the defendant." The order of the district court, sustaining a demurrer in favor of the defendant, was reversed.—*Froid v. Knowles (Colo.), 36 P. (2d) 156.*

Marriage: Annulment for Impotence.—The petitioner sued for the annulment of her marriage on the ground that her husband was at the time of marriage physically and incurably impotent. From a decree in her favor, her husband appealed to the Court of Errors and Appeals of New Jersey. The parties were married on Aug. 28, 1932, and separated Nov. 2, 1932. A proceeding for annulment was begun Nov. 10, 1932. It was conceded that the husband was from a sexual standpoint competent, except for prematurity of emissions. That prematurity, he contended, was not due to any defect on his part but "to nervous resistance and assertions of pain by the petitioner." The petitioner, said the Court of Errors and Appeals, falls short in her essential proofs. There was no proof of impotence other than the fact that the marriage had not been consummated, and the petitioner's recital of the reason for its nonconsummation stood alone, uncorroborated. The petitioner's proofs were deficient, too, in that they did not show that the impotence, if it existed at all, was incurable, and incurability is an essential characteristic of such impotence as affords a legal ground for a decree of nullity. The petitioner made the charge, and the burden was on her to prove it. No proofs were offered of incurability of impotence, if impotence existed at all, and no proofs from which incurability could be presumed.

On a showing, however, of continued cohabitation, the wife meanwhile remaining a virgin, the husband will be presumed to be impotent and the burden will be on him to overcome the presumption by proof that he is not at fault. How long a time must elapse before that presumption will begin to operate, the court had never decided and did not feel warranted in deciding in the present case. It was, however, clearly of the opinion that "having regard for the vicissitudes of life, a period of two months is wholly inadequate to cause the presumption to arise." As the petitioner did not prove her case, the decree of nullity entered in her favor by the court of chancery was reversed.—*Heller v. Heller (N. J.), 174 A. 573.*

Medical Schools: Classification by Licensing Board Lawful.—Under authority of Public Laws of New Jersey, 1924, c. 184, the state board of medical examiners adopted a resolution setting out the requirements to be met by a class A medical college in seeking to obtain a license to operate as such a college. To review the proceedings of the board fixing a standard for such colleges, the College of Mecca of Chiropractic obtained a writ of certiorari from the supreme court of New Jersey. When the proceedings were dismissed by that court, the college appealed to the Court of Errors and Appeals of New Jersey. The college contended that the action of the board in fixing requirements for the licensing of colleges should be set aside because the statute under which the board acted was unconstitutional. It contended that there was no power in the state to compel any privately conducted school to meet any requirement, unless the school was conducted in a manner inimical to the public health, public safety or public morals; that the act constituted an unlawful delegation of legislative authority to the board; that the act was unlawful special or class legislation, and that the act violated article [amendment] 14, section 1, of the Constitution of the United States, forbidding any state to deprive any person of life, liberty or property without due process of law or to deny to any person within its jurisdiction the equal protection of the laws. The Court of Errors and Appeals, however, affirmed the judgment of dismissal entered by the supreme court, adopting the opinion of that court "that the requirements of the statute were just and reasonable regulations, that the legislature was within its rights in passing the act and that the act 'does not offend against any constitutional provision.'"—*College of Mecca of Chiropractic v. State Board of Medical Examiners of New Jersey (N. J.), 174 A. 562.*

Society Proceedings

COMING MEETINGS

American Association for the Study of Goiter, Salt Lake City, June 24-26. Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pa., Secretary.
American Urological Association, San Francisco, June 25-28. Dr. Gilbert J. Thomas, 1009 Nicollet Avenue, Minneapolis, Secretary.
Maine Medical Association, York Harbor, June 23-25. Miss Rebekah Gardner, 22 Arsenal Street, Portland, Secretary.
Minnesota State Medical Association, Minneapolis, June 24-26. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.
Montana, Medical Association of, Helena, July 2-3. Dr. E. G. Balsam, 208½ North Broadway, Billings, Secretary.
National Medical Association, New Orleans, Aug. 11-17. Dr. C. A. Lanon, 431 Green Street, South Brownsville, Pennsylvania, Secretary.
National Tuberculosis Association, Saranac Lake, N. Y., June 24-27. Dr. Charles J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.
Northern Minnesota Medical Association, Duluth, Aug. 12-13. Dr. Oscar O. Larsen, Detroit Lakes, Secretary.
North Pacific Pediatric Society, Seattle, August 9-10. Dr. F. H. Douglass, 509 Olive Street, Seattle, Secretary.
Pacific Northwest Medical Association, Spokane, Wash., June 27-29. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Secretary.
Washington State Medical Association, Everett, Aug. 12-14. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
Wyoming State Medical Society, Lander, Aug. 12-13. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

10: 425-566 (April) 1935

*Asynchronism in Contraction of Ventricles in So-Called Common Type of Bundle-Branch Block: Its Bearing on Determination of Side of Significant Lesion and on Mechanism of Split First and Second Heart Sounds. C. C. Wolferth and A. Margolies, Philadelphia.—p. 425.

New Method for Recording of Heart Sounds. M. M. Schwarzschild and M. D. Feltenstein, New York.—p. 453.

*Course of Rheumatic Heart Disease in Adults: I. Factors Pertaining to Age at Initial Infection, Development of Cardiac Insufficiency, Duration of Life and Cause of Death. A. C. DeGraff and Claire Lingg, New York; introduction by A. E. Cohn, New York.—p. 459.

Id.: II. Influence of Type of Valvular Lesion on Course of Rheumatic Heart Disease. A. C. DeGraff and Claire Lingg, New York.—p. 478.

Rheumatic Heart Disease: IV. Life History of Severe Form of Disease. D. Davis and Soma Weiss, Boston.—p. 486.

Two-Step Test of Myocardial Function. A. M. Master, New York.—p. 495.

Circulatory Response to Exercise in Patients with Angina Pectoris: Therapeutic Implications. S. H. Proger, W. R. Minnich and H. Magendantz, Boston.—p. 511.

*Reestablishment of Cardiac Circulation During Progressive Coronary Occlusion: Experimental Study on Dogs. H. F. Robertson, Boston.—p. 533.

Electrocardiogram in Brown Atrophy of Heart. L. N. Katz, O. Saphir and H. Strauss, Chicago.—p. 542.

Effect of Digitalis on Appearance of Lead: IV. H. Strauss and L. N. Katz, Chicago.—p. 546.

Gallbladder Heart Reflexes in Man Under Spinal Anesthesia. R. B. Bettman and S. H. Rubinfeld, Chicago.—p. 550.

Common Type of Bundle-Branch Block.—Wolferth and Margolies made graphic studies of comparable time relations of certain events associated with the heart beat in the common type of bundle-branch block and various control cases. They found that a systolic bifid apex impulse can be recorded in some, but not in all, cases of bundle-branch block. It may also occur in cases without bundle-branch block. Comparison of the interval between the beginning of the QRS complex and the beginning of the carotid pulse wave in cases with bundle-branch block, in normal controls and in cases of cardiac decompensation, indicates that ejection from the left ventricle is significantly delayed in the common type of bundle-branch block. The delay is associated with the particular type of aberrant spread of the excitatory process that occurs in the common type of bundle-branch block. Comparison of the intervals between the beginning of the QRS complex and the beginning of the C wave recorded from the veins immediately above the right clavicle in cases of the common type of bundle-branch block and normal controls shows no significant delay in bundle-branch block. This suggests that in the common type of bundle-branch block there is no significant delay in the contraction of the right ventricle. In roentgen kymographic tracings of the aorta and pulmonary artery in the common type of bundle-branch block, the interval between the beginning of the QRS complex and the beginning of the aortic pulse was prolonged in each case. In the normal controls with single first sounds, the differences in time between the beginning of the aortic and the pulmonary artery pulses fell within the limits of error of the method. In the cases with split first sounds, both with and without intraventricular conduction defects, the differences in time between the beginning of the aortic and the pulmonary artery pulses tended to be greater than in the control cases with single first sounds. The observations support the hypothesis that in the common type of bundle-branch block there is asynchronism in the beginning of ejection from the two ventricles, owing to delay on the left side. The evidence also indicates that in some, possibly all, cases with split first sounds but without intraventricular conduction defect there is asynchronism in the beginning of ejection from the two ventricles. The association between asynchronism indicates that the split first sound has a right ventricular and a left ventricular component and that separation of these components is due to asynchronism in certain of the early phases of cardiac contraction in the two ventricles. Splitting of the second heart sound can be heard on auscultation and recorded in most cases of bundle-branch block. Splitting of the second heart sounds is due to asynchronism in closure of the two semilunar valves. In the common type of bundle-branch block, pulmonic closure usually precedes aortic closure. In cases with split second sounds but without intraventricular conduction defect, either aortic or pulmonic closure may come first. The evidence obtained is in accord with the hypothesis that the common type of bundle-branch block is due to delay in spread of the impulse on the left side. The view held by Eppinger and Rothberger and by Lewis is no longer tenable. No support was obtained for the statement that it is unjustifiable to attempt to localize the side of bundle-branch block from the direction of the major initial complex in the three limb leads of the electrocardiogram.

Course of Rheumatic Heart Disease in Adults.—DeGraff and Lingg describe the course of rheumatic heart disease, based on 644 patients who are dead, of a total of 1,633 patients who came under observation during ten years. Of these patients, 55.8 per cent were males and 44.2 per cent were females. Rheumatic heart disease usually existed alone (94.5 per cent) and was seldom combined with other etiologic types (5.5 per cent). The disease is one of childhood and early adult life, for it occurs and runs its course chiefly within the first four decades. After the age of 40 there is a small proportion of sufferers. Three fourths of those who survived to adult life are dead. The average age at initial infection is 17 years, at the first symptoms of cardiac insufficiency 28 years, at the first appearance of heart failure 30 years, and at death 33 years. That is, the average patient is infected at the age of 17 but will be free from symptoms and able to carry on ordinary physical activity for eleven years. He will then begin to suffer from diminished cardiac reserve, culminating in heart failure two years later. From this time to death, three years later, he is wholly an invalid or at least, in most cases, seriously incapacitated. The period of economic usefulness of a person afflicted with rheumatic heart disease is not more than eleven years after initial rheumatic infection, on the average, and in most cases less than nine years. Once symptoms of cardiac insufficiency appear, heart failure and death follow rapidly. Half of the patients suffer their first symptoms and failure and die within a period of from sixteen to twenty years, or between 20 and 40 years of age. To see even terminal stages of this disease after the age of 50 years is not a common experience. Death usually occurs as a result of a failing heart, but life is shortened in a fair proportion of cases by such conditions as subacute bacterial endocarditis, pneumonia and other diseases.

Reestablishment of Cardiac Circulation During Progressive Coronary Occlusion.—Robertson put the matter of cardiac nutrition during coronary obstruction to actual test in the living animal by producing gradual coronary occlusion and noting in what manner myocardial circulation was reestablished. There were two plausible routes by which these hearts could have been nourished, by the vascularized pericardial adhesions or by the vessels of Vieussens or Thebesius. He found that little or no nutritive function developed in those channels known as the vessels of Vieussens or Thebesius, which penetrate the myocardium from the heart cavities. Myocardial nutrition distinctly depended on the vessels contained in the pericardial adhesions. The microscopic studies, indicating little disturbance in the nutrition of the endocardial part of the myocardium, do not justify the conclusion that this part of the heart was fed by thebesian-like vessels. Intercoronary branches might have carried out this function. There was no evidence of an anastomosis developing between the epicardial or intercoronary vessels and the thoracic vessels by way of the aortic vasa vasorum to nourish these hearts.

American J. Obstetrics and Gynecology, St. Louis

29: 619-770 (May) 1935

Can the Mortality and Incidence of Cancer of Uterus Be Reduced? J. A. McGlinn, Philadelphia.—p. 619.
*Predisposing Factor for Normal Onset of Labor: Probable Rôle of Estrin. S. R. M. Reynolds, Brooklyn.—p. 630.
Physiology of Menstruation in Macacus Rhesus Monkeys: I. Influence of Follicular and Corpus Luteum Hormones: II. Effects of Anterior Pituitary Extracts. F. L. Hisaw, Madison, Wis.—p. 638.
Traumatic Neuritis in Puerperium. A. J. B. Tillman, New York.—p. 660.
Roentgenologic Diagnosis of Placenta Praevia. W. H. Ude and J. A. Urner, Minneapolis.—p. 667.
Production of an Active Endometrium in the Human Castrate. T. Neustaedter, New York.—p. 680.
Low Calcium Tetany of the New-Born as Problem for the Obstetrician. A. M. Hellman and J. L. Rothstein, New York.—p. 686.
Fetal Mortality in Relation to Labor. A. J. Meyer, Minneapolis.—p. 691.
*Barbiturates in Primiparous Labors. J. E. Tritsch and R. Brown, New York.—p. 700.
Extra-Uterine Pregnancy: Résumé of One Hundred and Three Cases. J. E. James Jr. and H. D. Lafferty, Philadelphia.—p. 711.
Prophylaxis of Congenital Syphilis. J. F. Coppolino, Philadelphia.—p. 714.
Lymphogranuloma Inguinale, Carcinoma and Syphilis: Triad of Diseases Occurring in One Patient. P. Bernstein, New York.—p. 718.
Sympus Apus, with Associated Truncus Arteriosus Communis. W. C. Hunter and H. E. Mackey, Portland, Ore.—p. 726.
Fibromyoma of Rectovaginal Septum. L. C. Scheffey and D. M. Farell, Philadelphia.—p. 731.
Metastatic Sarcoma in Ruptured Ovarian Cyst Complicating Pregnancy. C. S. Barnes and F. W. Konzelmann, Philadelphia.—p. 734.
New Pessary for Treatment of Inoperable Prolapse of Uterus. G. Gellhorn, St. Louis.—p. 737.
*Sex Determination Test of Dorn and Sugarman. D. S. Pankratz, Memphis, Tenn.—p. 740.
Fatality After an Interposition Operation. C. T. Beecham, Philadelphia.—p. 742.
Spontaneous Rupture of Uterus During Pregnancy Following Previous Classic Cesarean Section. M. L. Brandt, New York.—p. 743.
Puerperal Septicemia from Bacillus Welchii. C. A. Gordon, Brooklyn.—p. 745.
Spinelli Operation Followed by Pregnancy and Labor. W. P. Tew, London, Ont.—p. 747.
Massive Umbilical Hernia with Enterocystoma in New-Born. O. Glass, Newark, N. J.—p. 748.
A New Catheter Apparatus. M. Leff, New York.—p. 749.
Spontaneous Rupture of Uterus at Sixth Month of Pregnancy. F. A. Snidow, University, Va.—p. 751.
A New Obstetric Forceps. J. E. Garrison, Birmingham, Ala.—p. 752.

Predisposing Factor for Normal Onset of Labor.—Reynolds points out that under the influence of estrogenic material the contractions of the uterus become increasingly coordinated and powerful in the latter part of gestation. Until this time the hormone influence of the substance is held in abeyance by virtue of the antagonistic action of the luteal hormone, progestin, and possibly other hormones as well. As the ovum grows, uterine contractions become increasingly efficient, owing to the coordinating action of estrogenic substance and the marked degree of uterine distention. Later the uterine contractions become effective in expulsive force due in part at least to the shape of the full term uterus. The onset of labor may be determined by the time during gestation when the coordinated foregoing expulsive forces exceed the total restraining hormone and mechanical intra-uterine factors that make for the continuance of pregnancy. This statement should be regarded as a working hypothesis at best, in which the generalities are only approximate possibilities. The importance of the restraining influence to uterine emptying is suggested by the failure of Witherspoon to initiate labor by the administration of theelin near term.

Barbiturates in Primiparous Labors.—In their study of 185 primiparas, Tritsch and Brown compared several barbiturates, which were used in combination with other analgesic or amnesia-producing drugs. The drugs were diallylbarbituric acid, sodium iso-amylethyl barbiturate and morphine, sodium iso-amylethyl barbiturate and rectal ether, sodium allylisopropyl barbiturate with a mixture of opium and alkaloids, and sodium allylisopropyl barbiturate with scopolamine. No adverse effect of serious or permanent nature was observed on any patient. None of the mothers died and none developed any complications traceable to the use of an analgesic. The authors conclude that barbiturates used alone are apparently of less value for the relief of pain during labor and for the production of amnesia in labor than they are when combined with other drugs. Barbiturates combined with sedative or amnesia-producing drugs appear to accentuate and prolong their action. The labors were shortest in the patients in whom the greatest degree of analgesia and amnesia were observed. Ether by rectum used in conjunction with the barbiturates appears to delay labor to a degree. Barbiturates are excitants in about 25 per cent of all cases, and this condition is aggravated by the use of another excitant, such as scopolamine, and lessened by sedatives, such as a mixture of opium and alkaloids, and morphine. Apnea in the infants is more common when barbiturates are used during labor and is aggravated when a mixture of opium and alkaloids is used in addition. Considering safety of the mother and the infant, efficiency in producing analgesia and amnesia and simplicity of administration, the authors feel that the combination of sodium allylisopropyl barbiturate with scopolamine produced the most satisfactory results. Excitation produced by this combination is a deterring factor and requires special nursing care.

Inability to Duplicate Results of Sex Determination Test.—In an attempt to duplicate the observations of Dorn and Sugarman, Pankratz studied four pregnant patients. The earliest specimen of morning urine used was that from a patient during the nineteenth week, and the latest during the thirty-ninth week of pregnancy. At various intervals injections of from 8 to 10 cc. of pregnancy urine were made into the ear veins of selected young male rabbits and the testicles were excised and examined forty-eight hours later. Even when the animals were carefully selected as to age and descent of the testicles, there was considerable difference in the testicles of the controls. Spermatogenesis begins at a variable age, which cannot be accurately determined without histologic examination of the testicles. Difficulties were constantly encountered with experimental testicles in which spermatogenesis was not marked, and in some preparations there was a definite degeneration of some of the seminiferous tubules characterized by a large lumen and many pyknotic nuclei in the germinal epithelium. In a number of experiments a second injection of 10 cc. of pregnancy urine was made twenty-four hours after the first one. This did not affect the results, as was found by later determinations. It was also noted that there was no correlation between enlargement of the testicles and active spermatogenesis. The observations agree in general with those of Daily, Curphey and Romer, and Murphy and De Rényi. The author has been unable to duplicate the results obtained by Dorn and Sugarman with their sex determination test.

American Journal of Psychiatry, New York

91: 969-1214 (March) 1935

Hyperthyroidism and Psychobiologic Reactions. S. Katzenelbogen, Baltimore, and F. H. Luton, Nashville, Tenn.—p. 969.
Psychopathologic Effect of Drugs Affecting Vegetative System: I. Adrenalin. E. Lindemann, Iowa City.—p. 983.
*Therapeutic Use of Dinitrophenol and 3:5 Dinitro-Orthocresol in Schizophrenia: Preliminary Report. J. M. Looney and R. G. Hoskins, Worcester, Mass.—p. 1009.
Investigation of Polyuria in Schizophrenia. F. H. Sleeper, Worcester, Mass.—p. 1019.
*Blood Cerebrospinal Fluid Barrier in Mental Disorders: Distribution Ratio of Calcium and Its Relation to That of Bromide and to Protein Content of Cerebrospinal Fluid. D. Rothschild and C. N. Hamberg, Foxborough, Mass.—p. 1033.
Some Impressions of British Psychiatry. W. Line, Toronto.—p. 1059.
Etiology of Temporary Amnesia. F. H. Leavitt, Philadelphia.—p. 1079.
Remarks Introductory to Symposium on Relation of Psychoanalysis to Psychiatry. A. A. Brill, New York.—p. 1089.
Psychoanalysis in Psychiatric Hospitals. R. M. Chapman, Towson, Md.—p. 1093.
Relationship of Psychoanalysis to Psychiatry. L. E. Hinsie, New York.—p. 1103.
Psychiatric Training as a Prerequisite to Psychoanalytic Practice. H. S. Sullivan, New York.—p. 1117.
The Case of John Ruskin: Study in Cyclothymia. L. J. Bragman, Syracuse, N. Y.—p. 1137.
Program for Determination of Therapeutic Effectiveness of Psychoanalytic Method. C. O. Cheney and C. Landis, New York.—p. 1161.
Some Psychiatric Points of Interest In and About Washington. H. C. Woolley, Washington, D. C.—p. 1167.

Use of Dinitrophenol in Schizophrenia.—Looney and Hoskins studied the metabolic and therapeutic effects of 2:4 dinitrophenol and 3:5 dinitro-orthocresol administered consecutively to ten schizophrenic patients. Both drugs caused an increase in the rate of oxygen consumption with various other metabolic effects indicative of increased oxidative efficiency. The orthocresol proved to be the more potent but showed the property of causing discoloration of the skin and sclera. The thera-

peutic results were indeterminate. Aside from the discoloration of the integument by the orthocresol, neither drug, within the limits of dosage used, caused any perceptible harmful effects.

Blood Cerebrospinal Fluid Barrier in Mental Disorders.—Rothschild and Hamberg investigated the distribution of calcium between blood and cerebrospinal fluid in 400 cases of mental disorder. In the schizophrenic group, 29 per cent of the calcium ratios were above 2.2 and 3 per cent were below 1.8. In neurosyphilis, 8 per cent of the calcium ratios were above 2.2 and 12.5 per cent were below 1.8. Low ratios occurred with greatest frequency in untreated dementia paralytica patients. The other groups showed a smaller proportion of abnormal results without any striking preponderance of increased or decreased values. The results were suggestive of a tendency toward decreased permeability of the blood cerebrospinal fluid barrier in schizophrenia and increased permeability in untreated dementia paralytica patients. There was a general correlation between the distribution ratios of calcium and bromide in schizophrenia, affective psychoses and untreated neurosyphilis. In the individual cases this correlation was frequently lacking. Low calcium ratios tended to occur in cases presenting increased amounts of protein in the cerebrospinal fluid and high ratios in cases showing decreased amounts of protein, but this relationship was not consistent. The variations in the distribution ratio of calcium could not be accounted for by alterations in the protein content of the cerebrospinal fluid.

American Journal of Public Health, New York

25: 389-530 (April) 1935

Epidemiology of Amebiasis. J. C. Geiger, G. H. Becker and J. P. Gray, San Francisco.—p. 389.
Clinical Amebiasis in Relation to Public Health. A. C. Reed, San Francisco.—p. 396.
Laboratory Diagnosis of Amebiasis. K. F. Meyer and H. G. Johnstone, San Francisco.—p. 405.
Potential Problems of Industrial Hygiene in a Typical Industrial Area. J. J. Bloomfield and W. S. Johnson, St. Louis.—p. 415.
The City Health Officer Looks at Diphtheria Prevention. H. Williams, Baltimore.—p. 425.
Diphtheria Immunization by One Injection. V. K. Volk, Pontiac, Mich. —p. 430.
Potability of Water from Standpoint of Fluorine Content. H. V. Smith, Tucson, Ariz.—p. 434.
Relation of Action of Chlorine to Bacterial Death. C. S. Mudge and F. R. Smith, Davis, Calif.—p. 442.
Training Sanitary Inspectors. W. S. Mangold, Los Angeles.—p. 448.
Response of Peritoneal Tissue to Dusts Introduced as Foreign Bodies. R. R. Sayers, J. W. Miller and W. P. Yant, Pittsburgh.—p. 452.
Occupational Hazards in Agricultural Industries. R. T. Legge, Berkeley, Calif.—p. 457.
School Health Program as an Educational Activity. D. W. Gudakunst, Detroit.—p. 463.
Application of Neufeld Reaction to Identification of Types of Pneumococci, with Use of Antiserums for Thirty-Two Types. Georgia M. Cooper and Annabel W. Walter, New York.—p. 469.
Generalized Public Health Nursing Service in Cities. Naomi Deutsch, Berkeley, Calif.—p. 475.
Formation of Sanitary Districts in Recreation Areas. W. W. Chandler, Santa Ana, Calif.—p. 479.
The Vitamin B Adventure. R. R. Williams, New York.—p. 481.

American Journal of Syphilis and Neurology, St. Louis

19: 161-312 (April) 1935

Experimental Study of the Problem of the Existence of an Invisible Form of Syphilitic Virus, and of Spontaneous Spirochetosis in Rabbits. A. Bessemans, J. Van Haelst and H. DeWilde, Ghent, Belgium; translated by C. A. Neymann, Chicago.—p. 161.
The Venereal Disease Problem in the Colored Population of Baltimore City. F. O. Reinhard, Baltimore.—p. 183.
Fixed Eruption Due to Tryparsamide: Report of Case. J. E. Kemp, Chicago, and W. C. Menninger, Topeka, Kan.—p. 195.
*Ocular Reactions Due to Arsphenamine: Report of Twenty Cases. J. J. Skirball and F. M. Thurmon, Boston.—p. 197.
Syphilis and Marriage: Inquiry into Infectiousness of Semen of Patients Under Treatment for Syphilis. S. S. Greenbaum, S. Katz and Anna Rule, Philadelphia.—p. 210.
*Psychosis Associated with Administration of Tryparsamide. E. T. Hoverson, Chicago.—p. 217.
Arterial Changes in the Brain in Childhood. N. W. Winkelman, Philadelphia, and J. L. Eckel, Buffalo.—p. 223.
*Juvenile Paretic Neurosyphilis Studies: X. Clinical Course, Including Prodromal Symptoms, Nature of Onset, Remissions and Duration. W. C. Menninger, Topeka, Kan.—p. 238.
Id.: XI. Treatment. W. C. Menninger, Topeka, Kan.—p. 257.

Ocular Reactions Due to Arsphenamine.—In the experience of Skirball and Thurmon the occurrence of pathologic changes in the optic nerve head, the vitreous body and the retina in patients with syphilis during arsphenamine therapy are so clear cut and definite that they form an easily recognized and an extremely important clinical entity. There can be no doubt that these untoward manifestations are due to the toxic effect of the arsenical compounds. The changes are observed in both early and late syphilis. Recovery is usually complete if the condition is diagnosed early and proper management is instituted. The authors discuss the clinical progress of twenty patients with syphilis who have been carefully studied in the departments of ophthalmology and syphilis, in whom neuroretinitis and vitreous changes occurred during the course of arsphenamine therapy. Careful observation has shown that changes occurred definitely after the administration of arsphenamine and that recovery occurred after its discontinuance. Exacerbations recurred with the resumption of arsphenamine, and recovery again with its discontinuance. This observation in a series of cases carefully checked indicates that there is a definite toxic effect on the nerve structures of the eye caused by the administration of arsphenamine compounds. Since it is imperative for the treatment of early syphilis to be continuous, further treatment during this complication may be carried on with iodides and with preparations of bismuth or mercury without affecting the return of the ocular condition to normal.

Psychosis Associated with Administration of Tryparsamide.—Hoverson reviews the work of the last two years at the Kankakee State Hospital with tryparsamide, in which time a total of more than 2,000 injections was given to more than 200 patients. He believes that the occurrence of visual complications has been overemphasized, while other more commonly occurring changes have been neglected. In contrast to the four patients who showed visual changes during the tryparsamide medication, six patients presented the symptoms of a toxic psychosis. It seems that certain toxic features detectable by abnormal mental reactions are just as common a danger of contraindication to the use of the drug as are the commonly described visual changes. The nature of the toxic reactions and the facility with which they are recognized make the condition rather easy to detect and to treat successfully. Even though these reactions can occur, they should not serve to discourage any one from prescribing tryparsamide when it seems to be indicated. The psychosis, or mental reactions, in such cases is abrupt in onset, and the mental reactions of the individual in question undergo a decided change in the space of a few hours or days. The reactions observed are those of delirium and usually vivid hallucinations of either the auditory or visual type, or even both; attendant on these hallucinations are definite fear reactions with restlessness and overactivity. On the removal of the offending agent there usually results an abatement of the symptoms, with eventual recovery. Not all toxic reactions resemble this picture, but most of the symptoms enumerated are usually present in some degree.

Juvenile Paretic Neurosyphilis Studies.—Prodromal symptoms occur in juvenile dementia paralytica, but Menninger considers these the initial symptoms of the disease. Dulness was the most frequent initial mental symptom, and convulsions were the most frequent initial neurologic symptom. The type of onset of juvenile dementia paralytica varies with the native mental endowment of the individual. There are three distinct groups: (1) those with a marked feebleminded state in which the onset is vague and it often is impossible to set a date or age as the time of onset; (2) the moderately feebleminded children, who make an insidious but definite failure of previously learned accomplishments, and (3) the group of children who have a period of normal development prior to the onset of the disease. The nature of the onset in the great majority of cases is insidious and very gradual, so that an average of three years elapses between the time of onset and of examination. Occasionally the onset is sudden, with a convulsion, the development of paralysis or acute excitement. The clinical course of the disease is remarkably uniform, with the development of certain characteristic physical, neurologic and mental changes. Remissions are rare in juvenile dementia paralytica. While a small proportion of patients improve, and apparently in very rare instances spontaneously, there is no convincing record of a permanent remission. Cases with a basic feebleminded state may become negative serologically but rarely improve otherwise. Rarely is clinical improvement spectacular as seen so commonly

in the acquired form of dementia paralytica, and often the improvement is only transient. The outcome of the disease is nearly always death, which occurs occasionally in convulsions and with a relatively short period of acute physical ill health, or more often in a long drawn out failure, with the formation of contractures and a terminal intercurrent respiratory infection. The average duration of the disease is from four to five years, as compared to an average duration of two years of adult dementia paralytica. Several cases of a duration of fifteen years or more are cited. In general, the cases with early onset have a longer duration than cases with late onset.

Annals of Otol., Rhinol. and Laryngology, St. Louis

43: 945-1238 (Dec.) 1934

Histology of Epithelium of Paranasal Sinuses Under Various Conditions. J. S. Latta and R. F. Schall, Omaha.—p. 945.

Pseudo-Abscess of the Brain: Intracranial Disease During Otitis Media Simulating Encephalic Abscess. J. M. Nielsen and C. B. Courville, Los Angeles.—p. 972.

Conservative Treatment of Nose and Accessory Sinuses. W. E. Grove, Milwaukee.—p. 988.

Conservative Treatment of Pharynx. J. W. Carmack, Indianapolis.—p. 995.

Conservative Treatment in Diseases of the Ear. J. A. Babbitt, Philadelphia.—p. 1001.

Abscess of Larynx and Its Treatment. J. D. Kernan and H. P. Schugt, New York.—p. 1009.

*Ménière's Symptom Complex: Medical Treatment. A. C. Furstenberg, F. H. Lashmet and F. Lathrop, Ann Arbor, Mich.—p. 1035.

Carcinoma of Tonsil: Statistical Study of Two Hundred and Thirty Cases. L. A. Schall, Boston.—p. 1047.

Application of Viable Muscle in Vascular Injuries. O. J. Dixon, Kansas City, Mo.—p. 1055.

Innervation of Nasal Mucosa, with Especial Reference to Its Afferent Supply. K. Christensen, St. Louis.—p. 1066.

Cavernous Sinus Thrombosis; Recovery, Proved by Necropsy. E. R. Lewis, Los Angeles.—p. 1084.

Surgery of Great Superficial Petrosal Nerve: Its Possible Relation to Some of the Pathology of Nasal and Paranasal Mucous Membranes. E. F. Ziegelman, San Francisco.—p. 1091.

*Auditory Fatigue, Including New Theory of Hearing Based on Experimental Findings. E. M. Josephson, New York.—p. 1103.

Significance of Larynx as an Index in Treatment of Pulmonary Tuberculosis. C. Rubenstein, San Francisco.—p. 1114.

Obstacles Encountered in Electrocoagulation of Tonsils. W. J. Yonker, Oak Park, Ill.—p. 1117.

Importance of Radical Ethmoidectomy and Sphenoidectomy in Relief of General and Ocular Diseases. O. Wilkinson, Washington, D. C.—p. 1120.

Ménière's Symptom Complex.—Furstenberg and his associates assume from their experiments that the symptoms of Ménière's disease are due to the retention of sodium by the body. Apparently, the local tissues involved in Ménière's disease have either an increased avidity for sodium or an unusual sensitivity to it. The therapeutic indications are to permit as small an intake of sodium as is possible and to prevent the accumulation of sodium by the body. The former is easily attained by means of diet and the latter by the administration of acid-producing salts, such as ammonium chloride. When these two factors have been controlled, the intake of water does not need to be considered. The authors have successfully treated fourteen cases of typical Ménière's disease by this method. Each patient was carefully selected in an effort to rule out any obvious lesion, and every precaution was taken to eliminate psychic elements from the study. Each patient was hospitalized for a period of thirty days or more, and careful clinical and laboratory studies were made. Identical results were obtained for all patients. In no instance did the authors fail to produce an attack by the administration of sodium, and not once were they disappointed in obtaining complete relief by their medical therapy. They are aware that presumptuous claims for medical therapy cannot be based on their meager statistics. Their desire is to suggest a new etiologic factor in the production of Ménière's disease and to express the hope that it may lead to further research in therapeutics. Their treatment consists of a diet low in salt content, unrestricted or forced protein and calories as indicated. As medication, 3 Gm. of ammonium chloride in capsules is given with each meal, three days on and two days off. The ammonium chloride can be given in this dosage indefinitely. They have had patients with nephritis receiving ammonium chloride in this manner for a period of five years. The intake of water should be unrestricted, although excessive quantities of liquids should not be taken. An approximately neutral low sodium diet should be given, including certain foods which the author mentions.

Auditory Fatigue.—Josephson reports the paradoxical results obtained in a series of experiments undertaken to study fatigue of hearing, with especial reference to the part played by the auditory end organ. The results indicate that prolonged stimulation with submaximal intensities, designed to fatigue, result, on the contrary, in an increased acuity of hearing manifested by a lower threshold. It is shown that this paradoxical phenomenon is not obtained in ears in which the auditory accommodative mechanism of the middle ear is defective, and that to this mechanism there is to be attributed, in part, the increased acuity of hearing acquired by the trained ear. Fatigue manifested by a rise of threshold of intensity is described as the earliest sign of progressive deafness. A theory of the mechanism of hearing is advanced, which predicates the conversion of the mechanical energy of sound into electrical energy by the cochlea, and the stimulation of the end organs of the organ of Corti by the electrical audiofrequencies thus produced. The "cochlear spread currents" are thus interpreted as the direct stimulus giving rise to the action currents of the auditory nerve. An exception to the manifestation of auditory fatigue in cases diagnosed progressive deafness was found in a group of cases that presented varied neurologic signs. The most consistent of these was the head-neck past-pointing sign. These cases showed no rise in threshold following prolonged stimulation, indicating that the deafness was of central nervous type. These tests offer a differential sign between peripheral and central nerve deafness. With their aid the author has been enabled to isolate a type of case which on encephalography shows deformation of the ventricles but no definitely localizable lesion, which responds to spinal puncture and injection of air with a marked improvement in hearing, some cases with a restoration of hearing to almost normal, and a clearing up of tinnitus, with disappearance of the head-neck past-pointing sign and other neurologic signs.

Archives of Neurology and Psychiatry, Chicago

33: 687-916 (April) 1935

Corticospinal Fibers Arising in Premotor Area of Monkey: Distribution of Bouton Terminations. E. C. Hoff, New Haven, Conn.—p. 687.

Id.: As Demonstrated by the Marchi Method. Margaret A. Kennard, New Haven, Conn.—p. 698.

Heart Rate in Relation to Emotional Disturbances. J. C. Whitehorn, M. R. Kaufman and J. M. Thomas, Waverley, Mass.—p. 712.

Neurologic Aspects of the Epidemic of Encephalitis in St. Louis. J. W. Beckmann, St. Louis.—p. 732.

*The Pyknolepsies. S. E. Jelliffe and J. Notkin, New York.—p. 752.

Distribution of Bromide in Blood Serum and Cerebrospinal Fluid. F. Fremont-Smith, Mary Elizabeth Dailey and Dorothy H. Sloan, Boston.—p. 764.

Body Temperatures of Persons with Schizophrenia and of Normal Subjects: Effect of Changes in Environmental Temperature. J. S. Gottlieb and F. E. Linder, Worcester, Mass.—p. 775.

Alkali Reserve in Blood and in Cerebrospinal Fluid in Experimental Acidosis. E. de Thurzo and S. Katzenelbogen, Baltimore.—p. 786.

*Observations Following Left (Dominant) Temporal Lobectomy: Report of Case. J. C. Fox Jr. and W. J. German, New Haven, Conn.—p. 791.

Phylogenetic Interpretation of Functions of Visual Cortex. D. G. Marquis, New Haven, Conn.—p. 807.

Visual Pathways in Man, with Particular Reference to Macular Representation. W. Penfield, J. P. Evans and J. A. MacMillan, Montreal.—p. 816.

The Pyknolepsies.—Jelliffe and Notkin consider the relationship of pyknoleptic attacks to narcolepsy, hysteria, spasmophilia and epilepsy, especially to petit mal attacks. In their tabulation of 190 cases they have eliminated eighty-four as frankly epileptic. The only apparent reasons that they were reported under the heading pyknolepsy were the frequency and the relative shortness of the seizures. In pyknolepsies one is dealing with the old problem of general epilepsy. Most of the reasons offered by the various workers for creating a separate entity can hardly stand criticism. The disappearance of the attacks at the time of puberty cannot be considered a sufficient reason for classifying them as a separate entity. There are numerous cases of cryptogenetic epilepsy in which the attacks disappear at puberty, and there are at the same time numerous cases of pyknolepsy in which the attacks persist during adolescence and later. The matter of deterioration has been entirely overemphasized, as if the absence of deterioration in epilepsy were an exception to the rule. Strohmayer has pointed out that only 30 per cent of the patients with epilepsy show evidence of mental deterioration. Not all the patients with pyknolepsy

whose cases have been reported in the literature retained their mental integrity. The lack of therapeutic response to medicinal treatment has been held up by many investigators as a criterion for the consideration of pyknolepsy as an entity which has no relationship to epilepsy. In pyknolepsy, as in epilepsy in general, some of the patients respond to one and others to another form of therapy, while a number of patients remain refractory to any sort of therapy, as, for instance, do epileptic patients with petit mal attacks. Sometimes a psychologic approach may be helpful in certain cases. As to the etiology, one is probably dealing with the same situation as in cryptogenetic epilepsy and the attacks are probably closely related to petit mal seizures. In some of the reported cases and in one of the authors' cases there was a definite history of an injury to the head; in other cases there was evidence of a previous inflammatory process in the central nervous system, and in a third group affective instability could be considered a responsible factor in the lowering of the threshold of convulsibility. There is, however, in addition, some factor that is responsible for the unusual frequency of the pyknoleptic attacks; perhaps some metabolic process may be responsible for the phenomenon. In all probability, as in epilepsy in general, there is a multiplicity of etiologic factors. The authors therefore suggest the existence of various types of pyknolepsy, which, together with the narcolepsies, affect epilepsies and other well known paroxysmal disorders and make up the vast group of convulsive states.

Observations Following Left Temporal Lobectomy.—Fox and German resected the left temporal lobe of a right-handed man 3 cm. posterior to the junction of the rolandic and sylvian fissures for removal of an astroblastoma. Speech, vision, personality and restitution of function have been studied for fifteen months after operation. Analysis of the speech involvement revealed a deficient auditory receptive mechanism and impaired retention of auditory speech memories. In contrast to this, the visual mechanism suffered a relatively slight defect. It is concluded that the auditory component of speech is related to the dominant temporal lobe. The visual fields showed an upper quadrantic homonymous defect with the preservation of macular vision. An extensive macular representation in the optic radiation, similar to that found in the external geniculate body and calcarine area, is suggested. The principal personality changes were euphoria, some degree of emotional instability and slight reduction in drive. Functional recovery demonstrated two distinct phases: early, rapid improvement, probably related to edema and vascular changes produced by the operation, and later a slowly progressive phase, apparently associated with reeducation, representing true restitution. The latter type of recovery indicates the establishment of new domains of integration.

Archives of Ophthalmology, Chicago

13: 733-936 (May) 1935

The Formation of Papilledema. H. Lauber, Warsaw, Poland.—p. 733.
Arachnodactyly (Dystrophia Mesodermalis Congenita, Typus Marfanis; Marfan's Syndrome; Dolichostenomelia). R. I. Lloyd, Brooklyn.—p. 744.
Lectures on Motor Anomalies of the Eyes: IV. Functional Neuroses: Etiology, Prognosis and Treatment of Ocular Paralysis. A. Bielschowsky, Breslau, Germany.—p. 751.
Unilateral Exophthalmos Produced by Meningioma of the Middle Cranial Fossa: Report of Case. M. Cohen and J. E. Scarff, New York.—p. 771.
Histologic Appearance of Recent Retinal Tears. P. C. Kronfeld, Peiping, China.—p. 779.
The Central Path of the Light Reflex: Study of Effect of Lesions. H. W. Magoun and S. W. Ranson, Chicago.—p. 791.
Mixed Tumor of the Orbit of the Salivary Gland Type: Successful Removal, with Preservation of Eyeball. M. A. Last, New York.—p. 812.
Return of Symptoms After Successful Removal of a Pituitary Tumor: Complete Restoration of Central and Perimetric Vision by Medical Treatment. J. V. Clothier, Pocatello, Idaho.—p. 819.
Intracapsular Operation for Cataract: Report on a Fifth Hundred Successive Extractions. A. Knapp, New York.—p. 823.
*Local Quinine Therapy in Cases of Interstitial Keratitis and Old Corneal Opacities. E. Selinger, Chicago.—p. 829.
Etiology of Exophthalmos: Constitutional Factors, with Particular Reference to Exophthalmic Goiter. W. A. Plummer and R. M. Wilder, Rochester, Minn.—p. 833.
Acute Follicular Conjunctivitis, Béal's Type: Report of Seven Cases. P. Thygeson, Iowa City.—p. 853.
*Dacryadenitis in Hyperthyroidism. A. B. Reese, New York.—p. 855.

Local Quinine Therapy in Old Corneal Opacities.—The encouraging results of quinine therapy in cases of trachoma naturally suggested the use of the drug to Selinger in cases of interstitial keratitis and old corneal opacities resulting from interstitial keratitis and other causes. In cases of interstitial keratitis and old corneal opacities the 2 per cent ointment was used twice a day, just before retiring and again in the morning. The ointment causes a burning sensation, which lasts for several minutes but becomes slight after the ointment has been used for several days. There is no cumulative action of the drug. The antagonists and incompatibles of quinine are copper, lead, zinc, mercury and their compounds, ammonia, alkalis, iodides and bromides and their salts, tannic acid and lime water, and should not be used during treatment with quinine. Among the synergists are iron, arsenic and mineral acids. Quinine, besides being a bactericide and an astringent, is a protoplasmic poison, which penetrates deeply into the tissues when applied locally to mucous membranes. It destroys leukocytes and lymphocytes and probably causes the absorption of abnormal tissue elements, such as newly formed connective tissue in the cornea. Quinine bisulphate ointment has a favorable influence on the course of interstitial keratitis and promotes clearing of old corneal opacities.

Dacryadenitis in Hyperthyroidism.—Reese examined the extra-ocular muscles of two patients with progressive exophthalmos following thyroidectomy, whose postoperative basal metabolic rates were minus. In each instance the changes in the muscles were identical with those described by Naffziger. It was noted, however, that the lesions may be limited to one or several of the muscles; therefore, from an examination of one muscle or even of several muscles it cannot be stated that these changes are not present in a given case. Lesions similar to those in the muscles were observed in the lacrimal glands and were histologically identical. The glandular tissue was in all stages of degeneration and was being replaced by edematous fibrous tissue, throughout which were numerous lymphocytes. In places the lymphocytes were aggregated to form foci of considerable size. In other words, there appeared to be no diffuse orbital inflammation, nor was there evidence that the inflammation had spread from one site to the other. The observation of dacryadenitis in the cases seems to explain the presence of the enlarged and easily palpable lacrimal glands noted by Naffziger in four of his six cases. It is not uncommon in a case of exophthalmic goiter to see a partial prolapse of the lacrimal gland when the patient looks down and the upper lid is pulled up. An enlargement of the gland may be at least partly responsible for the prolapse, and the enlargement itself may be due to dacryadenitis, which in turn causes lacrimation, a not infrequent symptom in cases of hyperthyroidism.

Colorado Medicine, Denver

32: 265-352 (April) 1935

Obstetrics: Prenatal Care. J. R. Evans, Denver.—p. 276.
Id.: Conduct of Normal Labor. G. Jelstrup, Denver.—p. 279.
Id.: Diagnosis of Complications of Labor. L. W. Mason, Denver.—p. 283.
Id.: Management of Complications. E. L. Harvey, Denver.—p. 287.
Id.: Postpartum Care. H. J. Von Detten, Denver.—p. 292.
Id.: The First Week of Life. J. B. Walton, Denver.—p. 296.

32: 353-432 (May) 1935

Significance of Signs and Symptoms in Heart Disease. J. H. Brown, Colorado Springs.—p. 364.
*Early Diagnosis of Circulatory Peripheral Diseases. H. C. Graves, Canon City.—p. 370.
Treatment of Resistant Seborrheic and Impetigenous Infections of the Scalp. G. M. Frumess, Denver.—p. 374.
Subdural Hematoma: A Not Infrequent Sequel of Head Injury. L. E. Daniels, Denver.—p. 376.
Surgical Management of Malignant Lesions of Colon and Rectum. G. B. Kent, Denver.—p. 378.
Does Denver Need a Sewage Disposal Plant? I. C. Hall, Denver.—p. 385.

Early Diagnosis of Circulatory Peripheral Diseases.—Graves believes that alert inspection in the diagnosis of circulatory peripheral diseases shows the presence or absence of swelling, variations in color, pigmentation of the skin, presence or absence of sweating, and changes in the texture of the skin. Under the heading of inspection, attention should be called to the diagnostic importance of the angle of circulatory sufficiency. With the patient prone, the extremity should be moved slowly through a range of 180 degrees. If he has circulatory obstruc-

tion, the part will be swollen and cyanotic and show distended veins when dependent. As the part is slowly raised, the cyanosis and swelling will lessen and the prominence of the veins decrease until the angle of circulatory sufficiency has been reached. If the circulatory disturbance should be central and not peripheral, the angle of sufficiency will be close to the horizontal point. In organic peripheral obstruction, the angle of sufficiency will be below the horizontal. Palpation is the next logical procedure in diagnosis. The palm of the hand should be able to differentiate any gross differences in temperature between the good side and the affected side, or a more than normal drop in temperature as the extremity is palpated from the thigh downward. Palpation should recognize varices, differences in skin elasticity, alterations in skin sweating and any gross differences in pulse volume, particularly of the anterior tibial, the dorsalis pedis and the posterior tibial arteries. The skin is one of the most important heat regulating mechanisms. In the normal individual it will be highest on the trunk and head and progressively lower as one proceeds distally along the extremities. Furthermore, it will be slightly higher in men than in women. In estimating skin temperatures, the following regulatory elements must be considered: exercise, exposure, sweating and position. The skin of the extremities is responsible for heat regulation to a degree considerably more than 65 per cent. The control of this dissipation of body heat is considered to be the main function of the vasoconstrictor-gradient and the normal vasodilation level to 33 C. (91.4 F.) or more. The skin temperature under standard conditions of exposure should not be more than 10 degrees lower. Skin temperatures, under standard conditions will be proportional to the circulatory rate and volume. The circulatory rate and volume will then be governed by the presence or absence of obstruction, functional or organic, in the adjacent peripheral vessels. Organic obstruction can be determined by the failure of vasodilator procedures to raise the skin temperature.

Delaware State Medical Journal, Wilmington

7: 61-80 (April) 1935

Faculty Body Mechanics: Factor for Causing Diagnostic Errors. W. Bates, Philadelphia.—p. 61.
Use of Serum, Oxygen and Artificial Pneumothorax in Treatment of Pneumonia. H. D. Jump, Philadelphia.—p. 65.
Pyelitis in Children. C. E. Wagner, Wilmington.—p. 69.

Georgia Medical Association Journal, Atlanta

24: 119-160 (April) 1935

The Seasponge as Postoperative Dressing Following Radical Mastectomy. T. Harrold, Macon.—p. 119.
Nonsurgical Method of Treating Hemorrhoids. A. M. Phillips, Macon.—p. 120.
Streptococcic Empyema Treated with Semiweekly Irrigations of Merthiolate: Case Report. L. N. Todd and J. L. Tracy Jr., Waverly Hills, Ky.—p. 126.

Indiana State Medical Assn. Journal, Indianapolis

28: 213-266 (May 1) 1935

Value of Radioscopy in Heart Disease. C. A. Bishop, South Bend.—p. 213.
Some Recent Advances in Anesthesia. P. K. Knoefel, Nashville, Tenn.—p. 217.
*Gallbladder Disease Simulating Angina Pectoris. L. K. Gould, Fort Wayne.—p. 222.
Gastric Polyps. W. E. Pennington, Indianapolis.—p. 226.
Subphrenic Abscess. J. D. Hancock, Louisville, Ky.—p. 228.
Treatment of Laryngeal Tuberculosis. W. E. Stewart, Terre Haute.—p. 230.
Value of Oxygen Therapy in Medicine. A. C. Nickel, Bluffton.—p. 234.

Gallbladder Disease Simulating Angina Pectoris.—Gould states that the innervation of the gallbladder is derived from the left vagus and from the splanchnic through the celiac plexus, the fibers of which arise from the sixth thoracic to the first lumbar region of the spinal cord. The heart, however, receives its innervation both from the vagus and from the fibers of the thoracic sympathetic system. Yoell shows the innervation of the gallbladder and how disorders here might, by irritating the central portion of the diaphragm and the distal branches of the phrenic nerve, the vagus nerve, the intrathoracic nerves and the celiac plexus, set up impulses that can thus be projected into sensory zones not usually affected by disease in this region. In cases of cardiac disease, enlargement of the liver is the result of passive congestion, but, when due to chronic cholecystitis in a cardiopathic patient, one may naturally attribute its size and tenderness to stasis in consequence of the impeded circulation. It is this circumstance that renders the diagnosis of gallbladder disease difficult as a complication of cardiac lesions. A valuable sign of gallbladder disease of corroborative value in some cases is the so-called Ewald's area of cutaneous hyperesthesia on the right lower part of the back just internal to the posterior edge of the scapula over the course of the tenth and eleventh intercostal nerves. The heart symptoms seen in gallbladder disease are due to the closely related innervation of the two organs and a toxic myocarditis due to the absorption of toxins from a chronically inflamed gallbladder. The alarming increase of coronary disease and an extremely heart conscious public demand exactitude in diagnosis and not an infliction on the patient of the distressing verdict of angina without the most careful study.

Iowa State Medical Society Journal, Des Moines

25: 225-280 (May) 1935

The Autopsy. J. C. Hancock, Dubuque.—p. 225.
The Relation of the State Department of Health to the Practice of Medicine. W. L. Bierring, Des Moines.—p. 230.
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Old Age. N. B. Anderson, Des Moines.—p. 236.
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Diet in Treatment of Diabetes. R. N. Larimer, Sioux City.—p. 242.
Chronic Appendicitis. G. C. Blome, Ottumwa.—p. 244.
Two Mastoids. C. E. Sampson, Creston.—p. 247.
Infective Thrombophlebitis Secondary to Neck Infections. S. B. Chase, Fort Dodge.—p. 252.
Proper Drainage of Infections of the Hand. M. Hanchett, Council Bluffs.—p. 259.

Journal of Biological Chemistry, Baltimore

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Cystinuria: II. Metabolism of Cystine, Cysteine, Methionine and Glutathione. E. Brand, G. F. Cahill and M. M. Harris, New York.—p. 69.
Evidence of Adsorption Experiments on Forms of Calcium and Inorganic Phosphorus in Blood Serum. D. M. Greenberg and C. E. Larson, Berkeley, Calif.—p. 105.
Metabolism of *l*-Methionine and *dl*-Methionine in Adult and Growing Dogs Maintained on Diets of Various Protein Contents. J. A. Stekol, New York.—p. 147.
Lactase Activity of Intestinal Mucosa of Dog and Some Characteristics of Intestinal Lactase. F. A. Cajori, Philadelphia.—p. 159.
Comparison of Theelin Prepared from Stallion Urine, Human Urine, and from Theelol, with Notes on Colorimetric Estimation of Theelin and Theelol. G. F. Cartland, R. K. Meyer, L. C. Miller and M. H. Rutz, Kalamazoo, Mich.—p. 213.
Analysis of Albumin and Globulin in Biologic Fluids by Quantitative Precipitin Method. E. Goettsch and F. E. Kendall, New York.—p. 221.
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Subdivision of Metabolic Nitrogen in Feces of Rat, Swine and Man. B. H. Schneider, Urbana, Ill.—p. 249.
Study of Organic Acid-Soluble Phosphorus of Erythrocytes of Various Vertebrates. S. E. Kerr and L. Daoud, Beirut, Lebanon.—p. 301.
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Effect of Oxygenation and Reduction on Equilibrium of Hematocyanine with Acids and Bases. J. Shack, Cambridge, Mass.—p. 383.
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Determination of Oxygen in Blood in Presence of Ether by Modification of Van Slyke-Neill Technic. J. L. Shaw and Virginia Downing, Boston.—p. 405.
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Mucilage from Psyllium Seed, Plantago Psyllium, L. E. Anderson and M. Fireman, Tucson, Ariz.—p. 437.

Journal of Bone and Joint Surgery, Boston

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*Stimulation of Healing in Nonhealing Wounds by Allantoin Occurring in Maggot Secretions and of Wide Biologic Distribution. W. Robinson, Washington, D. C.—p. 267.
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End Results of Fractured Distal Radial Epiphysis. A. P. Aitken, Boston.—p. 302.
König's Operation in Treatment of Congenital Dislocation of Hip. G. J. Epstein and N. S. Epstein, Leningrad, U. S. S. R.—p. 309.
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Fractures and Dislocations of Cervical Spine. O. C. Hudson, Hempstead, N. Y.—p. 324.
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*Injuries Involving the Ilium: New Treatment. S. A. Jahss, New York. —p. 338.
Backward Displacement of Fifth Lumbar Vertebra: Optical Illusion. T. A. Willis, Cleveland.—p. 347.
Separation of Capital Femoral Epiphysis. A. R. MacAusland, Boston. —p. 353.
Operative Treatment of Hollow Foot. A. Farkas, Budapest, Hungary. —p. 370.
*Cartilaginous Inclusions in Rachitic Bones and Their Possible Relationship to Cartilaginous Tumors. P. E. McMaster, Los Angeles.—p. 373.
Treatment of Fractures of Os Calcis. H. R. Conn, Akron, Ohio.—p 392.
Influence of Shoe on Gait, as Recorded by Electrobasograph and Slow Motion Moving Pictures. R. P. Schwartz, A. L. Heath and W. Misiek, Rochester, N. Y.—p. 406.
Source of Pain in Amputation Stumps in Relation to Rational Treatment. A. G. Molotkoff, Leningrad, U. S. S. R.—p. 419.
Operation for Correction of Pronated Feet. R. Stephens, New York.—p. 424.
Combined Anterior-Posterior Approach to Knee Joint. E. F. Cave, Boston.—p. 427.
Comminuted Fractures of Patella: Treatment of Cases Presenting One Large Fragment and Several Small Fragments. J. E. M. Thomson, Lincoln, Neb.—p. 431.
Use of Jones Splint in Treatment of Fracture of Pelvis and of Neck of Femur: Series of Forty Cases. A. J. Langan, San Pedro, Calif. —p. 435.
Hip Joint Fusion and Shelf Operation. P. M. Girard, Dallas, Texas. —p. 443.
Congenital Coxa Vara: Report of Case. J. Zaremba, Krakow, Poland. —p. 450.
Transverse Wedge Arthrodesis for Relief of Pain in Rigid Flatfoot. I. Zadek, New York.—p. 453.
Complete Spastic Paraplegia, Due to Metastatic Abscess, in Case of Chronic Osteomyelitis of Femur: Spontaneous Recovery. T. F. Jarman, Cardiff, Wales.—p. 468.
Metastatic Melanotic Tumor of Tibia. C. Lasserre, Bordeaux, France.—p. 471.
Method of Applying Traction in T and Y Fractures of Humerus. R. F. Patterson, Knoxville, Tenn.—p. 476.
Exceptional Case of Undifferentiated Sarcoma of Humerus. H. B. Thomas, Chicago.—p. 478.
Fracture of Capitellum: Report of Case. M. S. Mazel, Chicago.—p. 483.
Conservative Treatment of Fracture of Capitellum. F. Christopher and L. F. Bushnell, Evanston, Ill.—p. 489.
Torticollis Due to Aberrant Sternal Portion of Sternocleidomastoid Muscle. W. J. Stewart, Columbia, Mo.—p. 493.
Light Inexpensive Frame for Transfixion Wire Traction on Fractures of Forearm and Leg. E. W. Cleary, San Francisco.—p. 494.
Modification of Böhler Walking Iron. D. Hand, Boston.—p. 497.
Skeletal Blastomycosis: Case Report. S. K. Livingston, Hines, Ill.—p. 499.

Stimulation of Healing in Nonhealing Wounds.—Robinson has found that allantoin, a constituent of the urinary secretions of surgical maggots and of common occurrence in plants and animals, stimulates healing, with abundant growth of healthy granulation tissue in slowly healing suppurative wounds. The excretion of this substance into the wound is doubtless one of the factors contributing to the remarkable healing effects obtained in maggot therapy, but the claim is not made that it can be substituted for maggots. Allantoin can be obtained commercially. It is bland, stable and harmless; it has no odor and is nonstaining. The treatment is simple, painless and inexpensive.

Injuries Involving the Ilium.—Jahss used the lever principle in treating a case of fracture of the ascending and descending rami of the pubes, with displacement. Heavy felt padding was placed at the proximal medial ends of the thigh, over the heads of the fibulas and the lateral malleoli. Both lower extremities were immobilized in plaster from the groin to the toes, with the knees in complete extension and the feet at an angle of about 90 degrees. The receptors for the turnbuckles were incorporated in the plaster proper. The greatest depth of the turnbuckle was exactly opposite to the direction of the force. All the receptors were placed medially. After the plaster was absolutely dry, the limbs were moderately abducted. A closed turnbuckle was placed between the proximal receptors and an open turnbuckle, 17½ inches long, between the distal turnbuckles. The closed turnbuckle was then slowly opened. This made the ligaments of the hip joints tense and tended to pull the pelvis open, accomplished by the spreading of the upper ends of the plaster dressings, which acted on the upper ends of the femurs. The distal turnbuckle was then slowly closed. This was the effort end of the lever; the proximal turnbuckle acted only as the fulcrum. As a result of this action of the turnbuckles, the space between the upper ends of the thigh was widened and that between the lower ends of the legs lessened. Just how much force should be applied through the turnbuckles is problematic, but in the author's case the determining factors were the immediate relief of pain in the pubic region on coughing or sneezing and the correction shown in the roentgenogram. The reduction itself can be accomplished in the short time necessary to open one turnbuckle and close the other.

Cartilaginous Inclusions in Rachitic Bones.—McMaster found separate islands of cartilage in spongiosa of bones removed at necropsy in a case of healed rickets and made clinical and experimental investigations to determine how frequently this occurs. Clinical material being scarce, the study was made from the material obtained in the reported case and in cases of experimentally produced rickets and from roentgenograms of clinical cases. In the author's case, cartilaginous inclusions in the epiphyses and metaphyses of the long bones, as well as in the ribs and vertebrae, were found. These inclusions, although fairly numerous, showed only faintly in the roentgenograms; hence such inclusions might easily be overlooked in clinical roentgen studies of rickets. In the experimental work on rats, cartilaginous inclusions were found in the metaphyseal, epiphyseal and cortical regions of bone in cases of healed rickets. Microscopic studies revealed that calcification was taking place in many of the inclusions. A few, however, appeared to be "latent" with slight, if any, evidence of calcification, and contained cells somewhat similar to those seen in a normal zone of proliferation in an epiphyseal plate. This proliferating type of cell in these rachitic inclusions might possibly serve as the "nidus" for benign cartilaginous tumors of bone. In the case of fracture and rickets presented, the roentgenograms, taken after healing had occurred, showed a large expanded circumscribed area in the cortical region of the lower metaphysis of the femur suggestive of a rachitic cartilaginous inclusion. This disappeared two years later.

Journal of Comparative Neurology, Philadelphia

61: 191-406 (April 15) 1935. Partial Index

Distribution of Sympathetic Nerve Fibers to Hind Limb of Cat. B. I. Burns, Chicago.—p. 191.
Corticifugal Fiber Connections of Cortex of Macaca Mullatta: Occipital Region. F. A. Mettler, Ithaca, N. Y.—p. 221.
Membranous Parts of the Brain, Meninges and Their Blood Vessels in Amblystoma. C. J. Herrick, Chicago.—p. 297.
Cortical Area Concerned with Coordinated Walking in Rat. N. R. F. Maier, Ann Arbor, Mich.—p. 395.

Journal of Experimental Medicine, New York

61: 593-734 (May 1) 1935

Relation of Leukosis to Sarcoma of Chickens: I. Sarcoma and Erythroleukosis (Strain 13). E. L. Stubbs, Philadelphia, and J. Furth, New York.—p. 593.
Extent of Local Dispersion of Infectious Agents as Factor in Resistance to Infection. F. Duran-Reynals, New York.—p. 617.
Studies on Sensitization of Animals with Simple Chemical Compounds. K. Landsteiner and J. Jacobs, New York.—p. 643.
Fixation and Protection of Viruses by Cells of Susceptible Animals. F. Rous, P. D. McMaster and S. S. Hudack, New York.—p. 657.
*Encephalomyelitis Accompanied by Myelin Destruction Experimentally Produced in Monkeys. T. M. Rivers and F. F. Schwentker, New York.—p. 689.
Relation Between Type Specific Carbohydrates of Pneumococci and Blood Group Specific Substance A. E. Witebsky, E. Neter and H. Sobotka, New York.—p. 703.
Nutritional Edema in the Dog: II. Hypo-Albuminemia and Augmentation of Tissue Fluid. A. A. Weech, E. Goettsch and E. B. Reeves, New York.—p. 717.

Experimental Encephalomyelitis Accompanied by Myelin Destruction.—Rivers and Schwentker observed that the repeated intramuscular injections of aqueous emulsions and alcohol-ether extracts of sterile normal rabbit brains in some manner produced pathologic changes accompanied by myelin

destruction in the brains of seven of eight monkeys (Macacus rhesus). Eight control monkeys remained well. Cultures from the involved brains remained sterile, and no transmissible agent was demonstrated by means of intracerebral inoculations of emulsions of bits of the brains into monkeys, rabbits, guinea-pigs and white mice. The character of the lesions observed is such that one would suspect that an infectious agent caused them. Nevertheless the presence of such an agent could not be demonstrated by means of stains and cultures. Inoculation of monkeys, rabbits, guinea-pigs and mice with emulsions of the involved brains failed to disclose a transmissible agent. The fact that the control animals remained well seems to indicate clearly that the pathologic changes which occurred in the brains of the treated monkeys were in some manner, either directly or indirectly, brought about as a result of the repeated intramuscular injections of aqueous emulsions and alcohol-ether extracts of sterile normal rabbit brain. The relation of their results to the paralysis accompanied by destruction of myelin that is known to follow the repeated injections of emulsified rabbit brain containing fixed rabic virus used in the vaccination of human beings against rabies is not clear to the authors. Each of their animals received more injections than are used in the Pasteur treatment, the smallest number being forty-six and the largest eighty-five. Further work is under way to determine the nature and the mechanism of the production of such lesions.

Journal of Immunology, Baltimore

28: 241-330 (April) 1935

Some Observations on Question of Various Manifestations of Antibody Activity Being Due to Separate Antibodies or Immune Substance Acting Differently Under Various Conditions. F. H. Teale, London, England.—p. 241.

Rôle of Precipitin Antibody in Removal of Intravenously Injected Antigen. J. T. Culbertson, New York.—p. 279.

Immunologic Study of Effects of Intense Sound Vibrations on Egg Albumin. E. W. Flosdorf and L. A. Chambers, Philadelphia.—p. 297.

Ultramicro Technic for Precipitation and Agglutination Reactions. C. L. Hudson and S. Mudd, Philadelphia.—p. 311.

Flaring Up of Injection Sites in Allergic Guinea-Pigs. L. Dienes and F. A. Simon, Boston.—p. 321.

Journal of Infectious Diseases, Chicago

56: 97-224 (March-April) 1935

Cultivation of Facultative Acid-Fast Bacteria from Filtrates of Rat Leprosy and of Human Leprosy. E. L. Walker and Marion A. Sweeney, San Francisco.—p. 97.

Antigenic Characteristics in Man of Certain Products of Pneumococcus: Comparison with Vaccine. L. D. Felton, W. D. Sutliff and B. F. Steele, Boston.—p. 101.

Complement Fixation and Opsonification Tests of Smooth and Rough Tubercle Bacilli with Serum of Patients Suffering from Different Grades of Tuberculosis. Ruth Tunnicliff, Katharine M. Howell and Nell Hirschberg, Chicago.—p. 111.

Presence of "Roughness" in Streptococcus Cultures from Endocarditis. Ruth Tunnicliff and Carrie I. Woolsey, Chicago.—p. 116.

*Bacillary Dysentery in Infants and Children: Clinical and Bacteriologic Study of Thirty-Five Cases. G. A. Denison and Gesina deHoll, Birmingham, Ala.—p. 124.

Effect of Splenectomy on a Latent Infection, Eperythrozoon Coccoides, in White Mice. Jessie Marmorston, New York.—p. 142.

*Latent Tuberculous Immune Bodies in Nontuberculous Individuals. A. B. Baker and M. Wetherby, Minneapolis.—p. 153.

Technical Errors in Studies of Bacterial Variation: "The Metamorphosis of Streptococci into Spore-Bearing Rods." W. L. Holman and Arline E. Carson, Toronto.—p. 165.

Influence of Some Environmental Factors on Thermal Resistance of Bacterial Spores. H. R. Curran, Washington, D. C.—p. 196.

Use of Gelatin in Rapid Test Preparations of Bacteria Abortus Antigen: Variations in Effect of Gelatin, in Bacteria Abortus Antigen Preparations, on Agglutination Titers of Bovine Serums. C. R. Donham and C. P. Fitch, St. Paul.—p. 203.

Resistance of Virus of Infectious Laryngotracheitis to Certain Physical and Chemical Factors. O. W. Schalm and J. R. Beach, Berkeley, Calif.—p. 210.

Bacillary Dysentery in Children.—Denison and deHoll state that the acute diarrheas of infancy should primarily be divided into gastro-intestinal infections almost invariably due to dysentery bacilli and gastro-intestinal disturbances of function from numerous causes. Before present classifications can be improved, bacillary dysentery must be completely removed from the other types. Infectious diarrheas are bacillary dysentery and should be so designated. Diagnosis should be supported by examination of the stools microscopically for pus and chemically for blood. The finding of these, with few very obvious exceptions, always means bacillary dysentery. The authors isolated 159 cultures showing fermentations characteristic of dysentery bacilli in the course of the study of thirty-five cases of infectious diarrhea in children and infants. Of 142 of these tested, 116 were agglutinable in antiserums for stock strains. Of seventy-two agglutinable cultures tested, fifty-three were identified by complete and fifteen by partial absorption of agglutinins in antiserums. Isolated strains corresponded to Y (Hiss), Mount Desert, WX, V and Sonne strains. An isolated strain (from one to six days) was identified by agglutinin absorption with fifteen strains from seven patients. Its antiserum was not appreciably affected by stock strains. It appears to be a member of the Flexner group, though not identical with any of the fifteen stock strains studied. Dysentery bacilli (Flexner group and Sonne) were isolated from twenty-six patients with infectious diarrhea (74 per cent). From each of two patients, two different strains were recovered. Dysentery bacilli were recovered from 63 per cent of the stools from which cultures were taken during the first five days of illness. After the fifth day the chances for recovering the organisms rapidly diminished, even though the majority of the stools continued to show blood and pus for fifteen days longer.

Tuberculous Immune Bodies in Nontuberculous Persons.—Baker and Wetherby tested the blood of 100 consecutive adult patients with chronic arthritis with the complement fixation test for tuberculosis both before and after a course of intravenous vaccination with streptococci. Fifty-one of the patients showed a positive skin test with old tuberculin and a negative complement fixation test before the institution of any therapy; of these, twenty-six reacted positively to the complement fixation test after the intravenous streptococcus vaccination. This would indicate that specific tuberculous antibodies may be exfoliated into the circulation of patients who at some previous time had had a tuberculous infection as indicated by the positive skin test. If antibodies indicate in any way resistance against tuberculosis, the results would suggest a persistent protection against tuberculosis long after the original infection. Forty of the total patients showed a negative Mantoux test and a persistent negative complement fixation test for specific tuberculous antibodies after the intravenous streptococcus vaccination. The occasional positive complement fixation test for tuberculosis in apparently normal persons may be explained in some instances on the basis of a nonspecific exfoliation of antibodies produced during a previous tuberculous infection.

Journal of Pediatrics, St. Louis

6: 427-602 (April) 1935

Studies in Fat Metabolism: I. Fat Absorption in Normal Infants. L. E. Holt Jr., H. C. Tidwell, C. M. Kirk, Dorothea M. Cross and Sarah Neale, Baltimore.—p. 427.

Id.: II. Fat Absorption in Premature Infants and Twins. H. C. Tidwell, L. E. Holt Jr., H. L. Farrow and Sarah Neale, Baltimore.—p. 481.

Studies in Infantile Allergic Eczema: II. Serum Lipids, with Especial Reference to Saturation of Fatty Acids. H. K. Faber and Dorothy B. Roberts, San Francisco.—p. 490.

*Effect of Fever Therapy on Rheumatic Carditis Associated with Chorea: Preliminary Report on Fever Therapy in Rheumatic Carditis Without Chorea. Lucy Porter Sutton and Katharine G. Dodge, New York.—p. 494.

Virus Encephalitis. E. L. Bauer, Philadelphia.—p. 512.

*Soy Bean (Vegetable) Milk in Infant Feeding: Results of Three and One-Half Years' Study on Growth and Development of Two Hundred and Five Infants. F. Rittinger, L. H. Dembo and Gilberta G. Torrey, Cleveland.—p. 517.

Range and Standard Deviations of Certain Physical Measurements in Healthy Children. W. P. Lucas and Helen Brenton Pryor, San Francisco.—p. 533.

Effect of Placental Extract on the Dick Test. A. Ross, Montreal.—p. 546.

Fever Therapy in Rheumatic Carditis.—Sutton and Dodge present sixteen cases in which the diagnosis of active rheumatic carditis was justified. The patients were given artificial fever therapy produced by the intravenous injection of triple typhoid vaccine for a concurrent chorea. In nine of these patients, all clinical signs of activity had subsided by the end of treatment. In the others, signs were gone in from a week to ten days following the end of treatment. Two cases are presented of subacute rheumatic carditis without chorea. The

patients were given artificial fever therapy produced by radiant energy. In one patient the signs of rheumatic activity cleared immediately following one treatment but recurred again to a much lesser degree eight weeks later. She was given a second fever treatment and has shown no clinical evidence of activity since. The second patient improved following one treatment, but the signs of activity did not completely subside until after a second treatment two weeks after the first. The authors suggest that the use of fever therapy in forms of rheumatic fever other than chorea deserves further study.

Soy Bean Milk in Infant Feeding. — Rittinger and his associates give the results of soy bean milk feeding over a period of three and one-half years in 205 infants who were fed this "milk" over variable periods. Growth and development, weight gains and their general progress point to the adequacy of the milk as a prophylactic food. The preparations used have been shown to contain adequate amounts of the essential vitamins, and metabolic investigations have demonstrated a relatively high biologic value. Soy bean milk in combination with various percentages of skimmed milk protein affords a food of high nutritional availability. Blood studies have shown a normal range of calcium and phosphorus (serum), and roentgenologic studies demonstrate good bony development and texture with few exceptions. Signs suggestive of rickets in a few instances have not been corroborated clinically or serologically. The stool flora shows a high percentage of gram positive organisms, thus resembling those of breast-fed infants. Soy bean milk is of practical value in the dietetic treatment of infantile eczema and in the treatment of constipation in infants by virtue of the "roughage" factor.

Journal of Thoracic Surgery, St. Louis

4: 335-444 (April) 1935

Consideration of Dangers of Lobectomy. E. Archibald, Montreal.—p. 335.
Lobectomy for Bronchiectasis in Children. J. V. Bohrer, New York.—p. 352.
*Vascular Changes in Experimental Atelectasis: Morphologic, Physiologic and Biochemical. W. E. Adams, L. Hrdina and L. E. Dostal, Chicago.—p. 377.
Observations on Treatment of Empyema, with Especial Reference to Drainage and Expansion of Lung. O. H. Wangensteen, Minneapolis.—p. 399.
Spinal Anesthesia in Thoracoplastic Operations for Pulmonary Tuberculosis. H. F. Newton, Boston.—p. 414.
Anatomy of the Diaphragm. P. E. Truesdale, Fall River, Mass.—p. 429.
Experimental Thoracogenic Scoliosis. J. D. Bisgard, Omaha.—p. 435.

Vascular Changes in Experimental Atelectasis.—Adams and his associates state that massive atelectasis of the lung is attended by an apparent increase in the vascularity of the tissue (passive congestion). Therefore the volume flow of blood in atelectatic tissue is decreased. In chronic atelectasis there is a gradual disintegration of the alveolar walls with the formation of channels leading from the circulating blood stream through the alveoli. This circulating blood reexpands the alveoli and may extend up the air passages into the smaller bronchioles. This phenomenon was first observed near the periphery of the lung parenchyma and round the larger bronchi. It was first seen in atelectasis of a duration of four weeks and slowly increased in amount. It was never observed to replace the usual architecture of atelectatic tissue in all parts of the section. Massive atelectasis of a duration of many months was reinflated by a pressure of 35 mm. of mercury. The reinflation was incomplete, and a lung lobe could be increased to only one half or two thirds of its original size. There was a considerable degree of laceration of the alveolar walls within the lung lobe due to reinflation. Only a part of the dilated blood-filled spaces was entered by the air introduced. A moderate amount of fibrous tissue proliferation occurred in atelectatic tissue. This was insignificant as compared to the marked fibrosis attending infected atelectatic lobes. Decreased volume flow of blood through an atelectatic lung was demonstrated by injection of the pulmonary arterial system, by blood oxygen determinations and by bleeding atelectatic and normal lobes of a similar size. Positive pressure insufflation of the aerated lung diverted a considerable quantity of blood from the aerated to the atelectatic lung. The amount of flow through an atelectatic lung with the aerated lung under a positive pressure insufflation of 35 mm. of mercury was about 25 per cent when determined by bleeding of two similar lobes and about 32 per cent when estimated from blood oxygen determinations. These figures would be considerably reduced if accurate measurements could be obtained with normal intrathoracic pressures prevailing. Oxygen saturation of mixed arterial blood was little influenced by the production of atelectasis of the left lung. This suggests a very low percentage volume flow of blood through the atelectatic lung.

Kentucky Medical Journal, Bowling Green

33: 157-204 (April) 1935

The Federal Social Security Program and the Congress. A. T. McCormack, Louisville.—p. 159.
*Preliminary Report on Use of Merthiolate Solution in Treatment of Tuberculous Empyema. T. A. Woodson and A. B. Mullen, Louisville.—p. 164.
Case of Tetanus. B. J. Bolin, Columbia.—p. 167.
Review of Typhoid Vaccination. J. O. Nall, Princeton.—p. 168.
Malignant Tumors of Thorax and Upper Abdomen. D. Y. Keith, Louisville.—p. 172.
Peptic Ulcer Treated by Venoclysis: Report of Cases. G. A. Hendon, Louisville.—p. 176.
Lead Poisoning in Children. W. W. Nicholson, Louisville.—p. 180.
Concerning Symptomatology and Diagnosis of Extramedullary Tumors of Spinal Cord. F. Jelsma, Louisville.—p. 181.
Tuberculosis a Public Health Problem. L. Bach, Bellevue.—p. 186.
Some Thoughts Along Economic Side of Practice of Medicine. G. G. Thornton, Lebanon.—p. 189.
Feeding the Diabetic. L. L. Smith, Louisville.—p. 192.
Congenital Hypertrophic Pyloric Stenosis. E. S. Allen, Louisville.—p. 197.

Merthiolate Solution in Treatment of Tuberculous Empyema.—For the last year and a half Woodson and Mullen have used merthiolate solution (sodium ethyl mercurithiosalicylate) in the treatment of eighteen cases of tuberculous empyema occurring as a complication to artificial pneumothorax. All except two have proved to be tuberculous empyema by laboratory methods, either by direct smear for the tubercle bacillus or by guinea-pig inoculation. In using the merthiolate solution the authors have been able to clear up the empyema in a number of these cases and at the same time maintain the artificial pneumothorax. Those on treatment at the present time show a favorable tendency toward clearing. The time required for complete clearing of the empyema was from three to seven months and in these cases it has not recurred except in one terminal case. The procedure has been to remove the pus thoroughly from the pleural cavity by direct aspiration and irrigate it at weekly intervals with merthiolate solution 1 : 10,000 or 1 : 5,000 in physiologic solution of sodium chloride, until the return is clear. From 20 to 100 cc. of the solution is left in the pleural cavity and the intrapleural pressures are equalized following the treatment. In five cases concentration of the solution was increased to 1 : 2,500, with only one reaction in which an uneventful recovery was made. The fluid in fourteen cases was frank pus, creamy or greenish in appearance. In the remaining three cases it was definitely turbid. Soon after starting the treatments, the character of the pus became definitely thin and assumed a light brownish color before finally disappearing. In three cases that were secondarily infected with staphylococci the cultures completely cleared in from three to four weeks. The results in these cases together with the remarkable results in a streptococcic empyema case suggest the advantage of merthiolate in nontuberculous empyemas.

Missouri State Medical Assn. Journal, St. Louis

32: 169-216 (May) 1935

Surgery at the Time of Introduction of Antisepsis: The Hodgen Lecture. H. E. Sigerist, Baltimore.—p. 169.
Classification and Treatment of Acute Head Injuries. L. T. Furlow and E. Sachs, St. Louis.—p. 177.
Group of Symptoms Frequently Involved in General Diagnosis, Typical of Sinus and Ear Disease and of Mandibular Joint Pathology. J. B. Costen, St. Louis.—p. 184.
Pain of Emotional Origin. L. D. Cady, St. Louis.—p. 190.
An Outbreak of Bacillary Dysentery at the St. Louis City Hospital. E. Sigoloff and M. E. Baron, St. Louis.—p. 194.
What May We Expect of Dinitrophenol? O. S. Jones, St. Louis.—p. 196.
Rocky Mountain Spotted Fever. A. R. Holdenried and O. E. Hagebusch, St. Louis.—p. 199.

Nebraska State Medical Journal, Lincoln

20: 161-200 (May) 1935

Carcinoma of the Prostate. E. Davis, Omaha.—p. 161.
Medical Thought versus Modern Sociological Trends. H. M. Jahr, Omaha.—p. 165.
Liver Function Testing. M. J. Breuer, Lincoln.—p. 170.
Some Observations on County Health Work. W. G. Emery, Hiawatha, Kan.—p. 172.
Anaphylactoid Purpura. O. A. Kostal, Giltner, and L. J. DeBacker, Hastings.—p. 175.
Intrapontile Tumor: Report of One Case. S. J. Carnazzo and B. C. Russum, Omaha.—p. 177.
*Chronic and Delayed Tetanus: Unusually Prolonged Incubation Period in Case of Tetanus. A. E. Bennett and M. Grodinsky, Omaha.—p. 178.
Two Cases of Trichinosis. J. Buis, Pender.—p. 179.

Chronic and Delayed Tetanus.—Bennett and Grodinsky present a case of tetanus with a delayed incubation period of 100 days, which showed a chronic form of tetanus for five weeks before treatment. The delayed incubation period was undoubtedly caused by a prophylactic dose of antitoxin but illustrates the fact that an injection of 1,500 units is not fully protective, especially if a foreign body remains in the local wound. Also tetanus may assume a chronic form in the presence of a foreign body. The case further stresses the need for radical treatment of a local lesion. All suggestive wounds should be explored and treated with antitoxin. The patient would probably have recovered by treatment of the local lesion alone. In the general treatment of tetanus, the authors feel that most patients are overtreated. A large curative dose of antitoxin should be given, followed by antispasmodics, barbiturates, such as amytal or tribrom-ethanol, and magnesium sulphate intraspinally or curarine in sufficient amount to control the motor spasms. They doubt whether repeating the doses of antitoxin does much good, provided the focal lesion is eradicated. If the patient will not recover under this management, he probably cannot be saved by massive doses of antitoxin.

New York State Journal of Medicine, New York

35: 469-516 (May 1) 1935

Address Delivered at the Dinner Tendered Dr. George W. Sargent, April 9, 1935, in Honor of His Fiftieth Year of Membership in the Ontario County Medical Society. A. J. Bedell, Albany.—p. 469.
Statistical Report of One Thousand and Sixteen Hernias on Second Surgical Division at St. Vincent's Hospital from 1924 to 1933. M. C. O'Shea, New York.—p. 473.
Common Causes of Reaction Following Use of Intravenous Solutions and Their Prevention. H. C. Falk, New York.—p. 480.
Organizing a Central Supply Room for Hospital Service. C. W. Cutler Jr., New York.—p. 485.
Problems in Differential Diagnosis: Report of Three Cases. W. H. Dunn, New York.—p. 491.
Why Socialized Medicine Is Inevitable. M. Rosenthal, New York.—p. 495.
Individualism and Medicine. H. Brooks, New York.—p. 498.

Public Health Reports, Washington, D. C.

50: 537-556 (April 19) 1935

*Studies on Origin of Newly Discovered Virus Which Causes Lymphocytic Choriomeningitis in Experimental Animals. C. Armstrong and J. G. Wooley.—p. 537.
Deaths from Excessive Heat in Kansas, 1934. E. G. Brown.—p. 546.

50: 557-594 (April 26) 1935

Sickness Among Male Industrial Employees During Final Quarter of 1934 and Entire Year. D. K. Brundage.—p. 557.

Virus That Causes Lymphocytic Choriomeningitis.—Armstrong and Wooley have isolated two strains of virus similar clinically, pathologically and immunologically to the strain previously described by Armstrong and Lillie (1934), which was encountered during the transmission, in monkeys, of infectious material from an individual who died at St. Louis during the 1933 encephalitis epidemic. Spontaneous infection among the authors' stock monkeys has been demonstrated by the isolation of the virus from a noninoculated monkey and by the demonstration of specific antibodies in the serums of five of forty-four such animals. The possibility that the virus may affect man is suggested, since two of the recovered strains are possibly of human origin. The ready and even spontaneous infection of monkeys with the virus, together with the fact that human serums (three from 166) possessing potent specific antibodies for the virus have been encountered, points in the same direction. As previously noted, the disease in monkeys resembles the human ailment designated as lymphocytic or aseptic meningitis, and serum collected from a person eleven months following a clinical attack of this disease gave strong protection against strains of the experimental virus. The establishing of immunity in the serum of an exposed subject giving no history suggesting this disease, however, indicates that immunity may develop in the absence of symptoms referable to the central nervous system.

Southwestern Medicine, Phoenix, Ariz.

19: 103-142 (April) 1935

Lymphopathia Venerea (Lymphogranuloma Inguinale). L. M. Smith, El Paso, Texas.—p. 103.
Pyelitis of Pregnancy. F. R. Harper, Tucson, Ariz., and R. M. Nesbit, Ann Arbor, Mich.—p. 108.
Congestive Heart Failure. C. T. Burnett, Denver.—p. 113.
Traumatic Emboli. R. S. Johnston, La Junta, Colo.—p. 120.
Conditions Associated with Splenomegaly. J. H. Musser, New Orleans.—p. 124.
Vaginal Hysterectomy, Clamp Method. J. W. Kennedy, Philadelphia.—p. 127.
Whooping Cough Vaccine Definitely Prevents Bronchial Asthma. E. B. Beaver, Aztec, N. M.—p. 131.
Purpura Hemorrhagica from Food Sensitization: Successful Treatment by Dietary Regulation and Use of Digestants: Case Report. O. H. Brown, Phoenix, Ariz.—p. 131.

Surgery, Gynecology and Obstetrics, Chicago

60: 891-1032 (May) 1935

*Sequences of Experimental Bacterial Infarction of Femur in Rabbits. G. H. Kistler, University, Ala.—p. 913.
*Sympathectomy as Preliminary to Obliteration of Popliteal Aneurysms, with Suggestion as to Sympathetic Block in Cases of Ligature, Suture or Thrombosis of Large Arteries. C. E. Bird, Louisville, Ky.—p. 926.
*Obstructive Lesions of Uterus and Their Complications. A. H. Curtis, Chicago.—p. 930.
The Preperitoneal Layer: Its Gynecologic Application. J. W. Davies, New York.—p. 941.
Diverticula of the Duodenum. H. C. Edwards, London, England.—p. 946.
Mechanism by Which Acidity of Acid Meal Is Reduced in Stomach. F. C. Hill, L. C. Henrich and C. M. Wilhelmj, Omaha.—p. 966.
Thyroiditis: Operative Procedure for Relief of Tracheal Constriction Due to Thyroiditis. F. H. Lahey, Boston.—p. 969.
Curability of Malignant Tumors of Upper Jaw and Antrum. G. B. New and C. M. Cabot, Rochester, Minn.—p. 971.
Congenital Arteriovenous Fistulas of Extremities Visualized by Arteriography. B. T. Horton and R. K. Ghormley, Rochester, Minn.—p. 978.
Resection of Kidney. H. L. Kretschmer, Chicago.—p. 984.
*Thrombophlebitis and Embolism, with Especial Reference to Danger of Pulmonary Embolism in Injection Treatment of Varicose Veins. F. V. Theis, Chicago.—p. 996.
Evolution and Present Technic of Gastrojejunostomy. R. W. McNealy and M. E. Lichtenstein, Chicago.—p. 1003.

Bacterial Infarction of Femur in Rabbits.—Kistler injected a hemolytic strain of Staphylococcus aureus, obtained from a culture taken from the blood stream of a man with a subperiosteal abscess and fatal septicemia, through the principal nutrient arteries of the femur of rabbits between 3 and 8 weeks of age. The suspension was directed through the deep femoral artery. Material introduced into the principal nutrient artery of the shaft was directed almost entirely to the medullary canal of the diaphysis. Each rabbit received from 0.2 to 0.6 cc. of the agglutinated living or killed suspension and died or was killed from twelve hours to forty-eight days after operation. A few were injected with nonagglutinated living staphylococci, but all died within two days. Several of the animals injected with living organisms died within twenty-four hours after operation; others lived as long as seventeen days, depending on the mass injected and the viability of the cocci. A pure growth of staphylococcus, similar to the strain injected, was obtained from joints with exudate that were contiguous with the injected femurs. Gross examination of femurs injected with agglutinated suspensions of killed Staphylococcus aureus demonstrated infarction and subsequent changes similar to those observed after occlusion of the medullary blood vessels by charcoal and significant of interference with growth of the bone, of ability to bear weight and of osteogenic reaction within the periosteum. Histologic preparations of femurs that received killed agglutinated organisms through the nutrient artery to the shaft demonstrated infarcts and anemic necrosis confined almost entirely to the metaphyses and endosteum. The smaller and more recent infarcts were wedge shaped and were situated

in the tissues immediately beneath the columns of epiphyseal cartilage without marked changes in the medullary tissues of the diaphysis or of the adjacent bony epiphysis. Large infarcts occupied the entire metaphysis, and in these the necrosis was most marked about the columns of ossifying cartilage toward the center of the growth region. Infarcts present for six days or longer showed a separation and reorganization process, present on all sides of the wedge except at the base beneath the epiphyseal cartilage plate. The primary site of embolic infarction of the femoral epiphyses was beneath the articular or other cartilage and was similar to metaphyseal infarcts beneath epiphyseal lines of the diaphysis. Necrosis in the femurs produced by carbon emboli was more marked and extensive in the medullary tissues of the shaft than after the injection of clumps of dead cocci. The gross alteration in the size and contour of the femurs infarcted with living agglutinated suspensions of Staphylococcus aureus were similar to but more marked than in those that received injections of killed organisms. Several joints contiguous to infarcted metaphyses contained exudate from which a pure culture of the organism was obtained. Microscopic examination demonstrated anemic necrosis, according to the pattern described for bland infarction, combined with exudative inflammation. The latter agent intensified the hemorrhages and necrosis and elicited a marked infiltration of polymorphonuclear leukocytes about the septic infarct. When the metaphyseal abscesses were sufficiently large to extend to the cortex, there was exudate in the canaliculi of the bone and occasionally beneath the periosteum. Necrosis of the subperiosteal tissues elicited a cellular and fibrous tissue reaction of the periosteum, dead bone absorption and new bone formation. Complete separation of the epiphysis occurred when the walling off process at the periphery of the cartilage plate was unable to maintain viable tissues between epiphysis and diaphysis. The walling off and reorganization process in septic infarcts seemed to proceed more slowly than those produced by bland staphylococcus emboli. Septic necrosis produced more new cortical and spongy bone, greater injury to the epiphyseal plates and more disarrangement of the medullary tissues of the metaphyses than did the aseptic infarcts. The new bone formed outside infarcts of the endosteal tissues was always well delimited from the dead cortical bone by cellular fibrous tissues containing osteoclastic giant cells, but sequestration was not observed.

Sympathectomy Preliminary to Obliteration of Popliteal Aneurysms.—Bird performed lumbar ganglionectomy as a preliminary procedure to the obliteration of a popliteal aneurysm, thereby avoiding the constrictor action of the sympathetic fibers on the collateral arteries during the dangerous early postoperative period. In the same way advantage should be derived from sympathetic ganglionectomy or sympathetic block carried out before or immediately after operations or injuries that involve obstruction or threatened obstruction to large arteries of the extremities. The rationale for these procedures is contained in the work of Mulvihill and Harvey. In suitable cases the apparatus of Herrmann and Reid for passive vascular exercise should accomplish the same result without interference with the sympathetic fibers themselves.

Obstructive Lesions of Uterus and Their Complications.—Curtis emphasizes the frequency of obstructions of the cervix and presents the important pathologic changes that are encountered in the more serious cases, instances of which are given. He believes that the various therapeutic procedures employed in the treatment of lesions of the cervix are more important than any other factor in the etiology of cervical obstructions. Endocervicitis is also of importance in the etiology, and in the majority of cases of serious stricture there is a history of an inflammatory process as well as of instrumentation. However, the absence of a history of infection or of instrumentation does not always give assurance of a patent cervical canal and adequate uterine drainage. Fibrotic constriction of the cervical lumen is much more serious than simple obstruction by adhesions. If drainage is not free, pocketing of the cervix may occur immediately above the fibrous obstruction. A metaplasia of the columnar epithelium into squamous epithelium has been found in the roughened pocketed endocervix above cervical strictures. A similar metaplasia has occurred in the pocketed endometrium above a cervical stricture. Irritation from retained secretions may be a factor in stimulating the metaplasia. In the presence of leukoplastic squamous cell metaplastic tissue bathed in retained menstrual fluid and débris, a possible explanation is found of the frequent incidence of squamous cell cancer of the endocervix and adjacent endometrium. Tumorous nodulations of the endocervix and lower portion of the uterine segment are a less common cause of uterine obstruction. The effects of damming back of uterine secretions and menstrual blood may be far reaching—perhaps important in the etiology of endometrial polyps, adenomyosis of the uterus, pelvic endometriosis and back pressure inflammatory processes in the pelvis. The relationship of obstructive retention to the development of intra-uterine cancer is a problem that merits further study.

Thrombophlebitis and Embolism.—Theis lists the following as contributing causes of pulmonary embolism in thrombophlebitis: 1. Limited damage or destruction of the endothelial lining of a vein leading to thrombus formation provides insufficient attachment of the clot to the wall of the vein. 2. Inactivity of the patient results in the formation of large coagulation stagnation thrombi instead of the limited solid mixed deposition thrombi. 3. Coagulation solutions for intravenous injections produce unattached coagulation clots. 4. Suppurative infection, either caused by direct contamination from surrounding tissues or hematogenous in origin is followed by disintegration and loosening of the clot. 5. Direct trauma or massage of the thrombotic area may loosen and detach a portion of the thrombus. Pulmonary embolism occurs most frequently in bedridden, debilitated and cardiac patients. With limited attachment of the thrombus to the wall of the vessel, the deficient circulation of blood aids extensive secondary red stagnation thrombus formation. These are easily dislodged and carried away in the circulation. Although thrombophlebitis produced by injection of chemical irritants, trauma or infection is indistinguishable clinically, there may be a marked difference pathologically. The possibility of detachment of a thrombus and embolism formation depends on the pathologic type of thrombus present. Thrombophlebitis of the extremities, irrespective of the cause, is less likely to be followed by pulmonary embolism than thrombosis in other locations. In the injection treatment of varicose veins, proper selection of cases for injection, skilled technic and complete cooperation of the patient after injection in continuing routine daily activities will lessen the frequency of pulmonary embolism.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

43: 177-232 (April) 1935

Flow of Blood in Relation to Anesthesia and Operation. F. C. Mann, H. E. Essex, J. F. Herrick and E. J. Baldes, Rochester, Minn.—p. 177.
*Hyperinsulinism, Hypoglycemia, Subtotal Pancreatectomy. G. Thomason, Los Angeles.—p. 185.
Acute Mesenteric Lymphadenitis. E. P. Coleman, Canton, Ill.—p. 193.
Gas Bacillus Infection. M. Hanchett, Council Bluffs, Iowa.—p. 199.
Peptic Ulcer in Childhood: Gastro-Enterostomy on Seven Year Old Boy. C. C. Nesselrode and D. N. Medearis, Kansas City, Kan.—p. 208.
The Membranes in Labor. N. Williams, Los Angeles.—p. 216.
Posttraumatic Cerebral Softening: Delayed Symptoms Suggesting Interval Hemorrhage Following Minor Injury to the Head. C. B. Courville and C. W. Olsen, Los Angeles.—p. 219.
Influence of Theelin on Psoriasis in the Female. J. A. Sperry, San Francisco.—p. 224.

Hyperinsulinism, Hypoglycemia, Subtotal Pancreatectomy.—Thomason reports a typical case of hyperinsulinism with hypoglycemia, representing one in which there was evidently a hyperfunctioning pancreas, no tumor being present, in which a subtotal pancreatectomy was performed. The removal of the greater portion of the pancreas produced favorable results quite comparable to those cases of cure reported in which a tumor was found and surgically removed from the pancreas. The patient made an uninterrupted recovery. Two days after the operation the blood sugar was 138 mg. and five days later it was 111 mg. From then until the present, on a normal diet, even low in starch and without sweets, the blood sugar has ranged well within normal limits—from 87 to 91 mg. —and the patient reports himself as feeling very fit.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

52: 1-82 (Spring) 1935

The Problem of Man's Origin. A. R. Short.—p. 1.
License to Practice and Liberty to Teach Medicine in English Provinces. J. A. Nixon.—p. 19.
Habit and Illness. H. H. Carleton.—p. 41.

British Journal of Anæsthesia, Manchester

12: 97-148 (April) 1935

The Ideal General Anesthetic. W. N. Kemp.—p. 99.
Absorption of Local Anesthetics by Human Tissue and Their Toxic Effects. G. Bankoff.—p. 106.
Arrangement and Equipment of Anesthetizing Rooms. G. Edwards.—p. 118.
Two Hundred and Fifty Cases of Spinal Anesthesia with Percaine According to Method of Jones. H. Franken.—p. 124.

British Journal of Tuberculosis, London

29: 63-126 (April) 1935

Why the Pulmonary Form of Tuberculosis Is Common in Adults and Nonpulmonary Form in Children. P. F. Armand-Delille.—p. 64.
*Study of Tuberculous Disease in Infancy and Childhood, with Particular Reference to Primary Sites of Infection. J. W. S. Blacklock.—p. 69.
*Natural Cure or Collapse Therapy in Treatment of Pulmonary Tuberculosis. M. Jaquerod.—p. 86.
Treatment of Cavities in Pulmonary Tuberculosis. H. M. Davies.—p. 91.
Apicolysis and Plombage in Treatment of Tuberculous Cavities. F. Häberlin, with collaboration of B. Hudson.—p. 100.

Tuberculous Disease in Childhood.—Blacklock observed 2,500 consecutive necropsies on children in whom a thorough search for evidence of tuberculous disease was made. The peak incidence occurred in the third year. Girls at all ages were more often affected than boys. The yearly incidence of positive tuberculin tests in a large number of children who came to necropsy practically corresponded with the incidence of tuberculous lesions found. The tuberculous lesions were the cause of death in 240 (95.2 per cent) of 252 subjects less than 3 years of age and in ninety-three (74.4 per cent) of 125 over this age. In five cases there were double primary sites of infection, one in the thorax (responsible for death) and one in the abdomen. The primary site of infection was most commonly thoracic and then abdominal, cervical or unknown. Primary thoracic tuberculosis occurred in 63.4 per cent of the tuberculous cases and, relative to the number of necropsies, had a higher incidence in subjects more than 3 years but was more frequently fatal under this age. Only 0.6 per cent of the children less than 3 and 9 per cent over this age with primary thoracic tuberculous lesions did not die as a result of the tuberculous infection. Primary lesions of the lung of a more acutely progressive type were found in children less than 3 years than in those over, while evidence of arrested lesions was commoner in the older children. The primary lesion of the lung was always associated with tuberculous tracheobronchial glands and was rarely the sole tuberculous lesion in the lungs. Most of the children with primary intrathoracic tuberculosis died of generalized infection, and this was slightly commoner in children less than 3 than in those over. In 149 children who died, the infection was due to human strains in 143 and bovine in six (4 per cent). There was a slightly higher proportion of bovine strains in children in the first three years of life than in those between 3 and 13. From children not dying as a result of the tuberculous lesion, five human strains were isolated. In 123 (32.4 per cent) investigated, the primary site of the tuberculous infection was abdominal. The relative incidence of primary abdominal lesions to the total necropsies was greater in children more than 3 years of age, but more deaths resulted from the abdominal infection in the younger children. Intestinal ulceration was present in twenty-two abdominal cases; such lesions were always fatal and were more common in children less than 3 years of age. In 101 instances there was no tuberculous intestinal lesion but the mesenteric glands were caseous. In 74.4 per cent of children less than 3 and 29.3 per cent of those over this age, generalization of the infection caused death. Tuberculous disease localized to the abdomen caused more deaths than similar disease confined to the lungs. Of the bacilli isolated from the abdominal cases in which death resulted from tuberculosis, eleven were human strains and forty-seven (81 per cent) bovine. From children not dying as a result of the abdominal disease, two human and thirteen bovine (86.7 per cent) strains were obtained. The prognosis in primary abdominal tuberculosis is better than that in primary thoracic tuberculosis, but the diagnosis of the abdominal disease in the early stages is often very difficult. Primary tuberculosis of the cervical glands occurred in only eight (2.1 per cent) children, of whom two did not die as a result of the lesions, the remainder dying of generalization of the disease. From this group three human and three bovine strains were isolated. In seven no primary source was found, and three human strains were obtained from these.

Natural Cure or Collapse Therapy in Treatment of Pulmonary Tuberculosis.—Jaquerod suggests that the patient with a recent pulmonary lesion should be given the chance of improving with simple medical means, which in a number of cases is all that is necessary to obtain a complete cure in the minimum of time and with the minimum of organic and functional disturbance. The process of healing in these cases in no way differs from that brought about by collapse therapy, except that the latter is more certain and more thorough. Since it is admitted that a pneumothorax should be induced when it is seen that the patient is not improving with simple medical treatment, it would seem that the chronic fibroid case encountered so often formerly should not be in evidence today. This would be so if pneumothorax gave perfect results, but this is far from being the case, and the author believes that he does not exaggerate when he says that the chronic fibroid case is as common today as before the introduction of collapse therapy. When confronted with a case of recent disease, and one weighs in the balance the advantages of treatment by rest alone and treatment by artificial pneumothorax, it is not right to infer that the one offers but a mediocre chance of cure whereas the other gives the patient almost a certainty of rapid and complete recovery; for in a considerable number of cases treatment by pneumothorax will only mean a series of painful procedures continued over a period of years. The author believes that the custom which would enforce collapse therapy at once for all cases of pulmonary tuberculosis is not justified, for there are cases which reap the greatest possible benefit by being given the opportunity of obtaining a lasting cure by simple and natural means.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

42: 217-408 (April) 1935

Grave Risks of Hookworm Disease as Complication of Pregnancy. G. A. W. Wickramasuriya.—p. 217.
*Study of Acute Mastitis of the Puerperium. A. A. Moon and B. Gilbert.—p. 268.
Further Report on One Hundred and Seventy-Three Cases of Cancer of Cervix, 1922-1933. F. A. Maguire.—p. 283.
*Autogenous Infection in Relation to Puerperal Morbidity. R. K. Ford.—p. 297.
Case of Twins in Which Second Fetus Presented by Thorax. H. E. Rodway.—p. 304.
Maternal Obstetric Palsy: Case. H. E. Rodway.—p. 306.
Allergy and Dysmenorrhea. P. C. Dutta.—p. 309.
Cancer of Uterus Showing Extensive Glandular Involvement: Case. C. M. Gwillim and N. M. Matheson.—p. 318.
*Intravenous Use of Pituitrin in Obstetrics. H. A. Baron.—p. 322.

Study of Acute Mastitis of the Puerperium.—In 100 cases of acute puerperal mastitis, Moon and Gilbert observed that three fourths of the cases occurred in primiparas. Preexisting infective foci, hemorrhage during labor and albuminuria of pregnancy do not appear to be predisposing causes. Intervention with normal labor by induction, cesarean section and other obstetric operations are of considerable importance. A comparison of the frequency of acute mastitis in hospital and district patients shows that the disease is essentially one of institutions and throws some light on various etiologic factors considered. A study of the incidence of acute mastitis at the authors' hospital over a period of nine years shows that there has been a general increase, most marked since 1931 and reaching a maximal peak in the early part of 1934. There is some tendency to a periodic variation, the crests occurring for the most part over a period covering the last two and first two months of the year. The onset of pyrexia is by far the most common in the second week, on or about the eleventh day.

Unilateral mastitis occurs twice as often as bilateral mastitis. Only one fourth of the cases of acute mastitis resolved. There is an apparent variation in severity as well as in incidence. The average time of operation is the twentieth day of the puerperium. Delayed operation, after awaiting complete localization, is preferred to prompt incision. The importance of cracked nipples as an etiologic factor tends to be exaggerated. Three different methods of local prophylactic nipple treatment yielded no alteration in the incidence of acute mastitis. Staphylococcus aureus was the cause of all the breast abscesses examined bacteriologically. The average duration of indoor hospital treatment for all cases of acute mastitis (resolved and suppurating) is about thirty-five days. Among the infants of these patients there is a mortality of 3 per cent, and a morbidity of 8 per cent due to intestinal infection presumably from the mother's milk. The baby should be removed from both breasts as soon as a definite diagnosis of acute mastitis is made. From the bacteriologic investigations on the milk of normal lactating mothers, it appears that Staphylococcus albus does not cause acute mastitis but that Staphylococcus aureus is the essential organism. The presence of Staphylococcus aureus alone does not necessarily mean an acute mastitis, and other factors are necessary: a virulent strain of organism, lack of local immunity of the breast and alterations in the chemistry of the milk are contributing causes. Future lactation is not interfered with in the great majority of cases after an abscess of the breast; the causes of failure to feed subsequent babies are retracted nipples, painful scars and deficient secretion.

Autogenous Infection in Relation to Puerperal Morbidity.—Ford made an attempt to assess the resistance to infection in pregnancy and selected the Dick test for trial as being readily applied. A series of 220 patients were tested at about thirty-six weeks of gestation and again after delivery. Cervical smears were taken in every case of a positive result. Not one of the cervical smears produced a culture of streptococci. Six cases of puerperal pyrexia occurred. All these patients had exhibited negative antenatal and postpartum reactions. The pyrexia varied from a mild to a fairly severe degree. The patients made satisfactory recoveries, with the exception of the one suspected of having pulmonary tuberculosis, who is understood to be still under observation for tuberculosis. Ten patients who had exhibited antenatal negative and postpartum positive tests were requested to attend again, at varying periods after their confinements, for further tests. Only six attended, and two did not return for the reading of the result. All four who appeared exhibited negative results. It is difficult to determine the correct interpretation in the cases (4.5 per cent) that exhibited negative reactions before labor, positive ones soon after it and again negative ones later. If it is assumed that a negative reaction to the Dick test indicates the presence of a certain minimal amount of antitoxin in the circulation, it is conceivable that these patients sustained mild infections but that the amount of antitoxin available was in each case adequate without necessitating any such reaction as would be evidenced by noticeable rises of temperature or pulse rate, and that this balance in hand of antitoxin was gradually restored later. Streptococcic forms were, however, not found in cultures from the cervices of any of these patients and material for such cultures was taken immediately after the reactions were noted. Alternatively, it is possible to consider that the actual physical strain of labor itself in these patients produced temporarily a generally lowered resistance to infection. Such a theory as this would account for the rapid development of severe general infections on occasion without obvious definite cause, considering that latent infections are known to exist, as supported by the cases quoted showing that coliform organisms may be responsible for severe infections. Some extragenital source of infection may be responsible for a proportion of the puerperal variety.

Intravenous Use of Solution of Pituitary in Obstetrics.—Baron states that, in properly selected obstetric cases, solution of pituitary in doses of 1 minim (0.06 cc.) has been safely administered intravenously. The best results were obtained in initiating labor in patients in whom the membranes had ruptured, and in secondary inertia either before full dilatation or with full dilatation when the head was on the perineum. In the latter cases the use of the forceps was obviated. Good results have been obtained in cases of postpartum bleeding and after cesarean section. Its use for obstetric diagnosis—fibroids and extra-uterine pregnancy, for missed abortion and after reduction of the inverted uterus is suggested. It has been unsuccessful (in the author's experience) in starting labor before term, especially with intact membranes, even in conjunction with castor oil, quinine and hot enemas. There are important contraindications to the use of the drug, which, if observed, will prevent its falling into disrepute.

Lancet, London

1: 791-848 (April 6) 1935

*Study of Pneumococcic Pneumonia: I. D. T. Davies, H. G. Hodgson and L. E. H. Whitby.—p. 791.
Results of Fifty Cases Treated by Psychotherapy. W. L. Neustatter.—p. 796.
Clinical Trials with New Antityphoid Serum. A. Felix.—p. 799.
Surgical Closure of Tuberculous Apical Cavities. W. H. C. Romanis and T. H. Sellors.—p. 802.
*Sterility and Psychoneuroses Following Lumbar Sympathectomy. A. F. Hurst.—p. 805.
Leptospiral Jaundice Among Sewer Workers. J. M. Alston.—p. 806.

1: 849-916 (April 13) 1935

Study of Pneumococcic Pneumonia: II. D. T. Davies, H. G. Hodgson and L. E. H. Whitby.—p. 849.
Sepsis and the Skin. J. T. Ingram.—p. 853.
Ferry's Meningococcus Antitoxin in Treatment of Acute Cerebrospinal Fever. H. S. Banks.—p. 856.
Large Enchondromas in a Case of Dyschondroplasia. J. K. Monro.—p. 858.
Trauma and Sarcoma. J. J. M. Shaw.—p. 860.

Pneumococcic Pneumonia.—The nineteen cases of pneumonia that Davies and his co-workers selected for serum treatment were those in which symptoms were severe or the risk poor. Only two ended fatally—one from meningitis after an apparent recovery and the other from a bilateral deep-seated empyema. Both of these had shown an initial response to serum. The group includes three cases treated on the sixth day; a positive blood culture was found in four, though in the two patients that died the blood was sterile. It speaks favorably for the potency of serum that the four showing a positive blood culture recovered, and of these one was positive as late as the sixth day. The effect of the serum on the symptoms was undoubted. In the early case it was immediate and the febrile period was obviously shortened. The respiratory embarrassment was greatly allayed, although the signs of consolidation remained or in some cases actually progressed, even though the crisis had occurred and the patient was afebrile. The cases showed definite symptomatic benefit, and, although this was more obvious when the serum was given within the first three days, the authors concluded that some effect was obtained when it was given later. If antipneumococcus serum is specific they think it should not be withheld from patients desperately ill on the sixth or seventh days, as it may prolong life for an extra day and thus allow a crisis to be established. They regard any case of type I pneumonia as showing need of serum if the condition is severe and the prognosis uncertain. Moreover, since serum may "abort" the disease when given early, its use should always be considered in cases seen during the first three days; if it shortens the febrile period it will make extension or relapse less likely.

Sterility and Psychoneuroses Following Lumbar Sympathectomy.—Hurst states that lumbar sympathectomy should be performed only in males when a condition is present which is likely to receive sufficient benefit to compensate for the unavoidable sterility that will develop. He doubts whether it is ever justifiable in boys with Hirschsprung's disease. In the eight cases that he has seen since the war, nonsurgical treatment led to improvement just as great as that claimed for sympathectomy. The operation should never be performed on an adult male without his written consent after he has been told of the effect it will have on his sexual functions. If he knows what to expect, he is also very unlikely to develop psychoneurotic symptoms as a result of the loss of emission. The author presents two cases in which the impairment in sexual functions following lumbar sympathectomy in men was followed by serious psychoneurotic symptoms.

Medical Journal of Australia, Sydney

1: 385-416 (March 30) 1935

The Problem of Maternal Welfare. Constance E. D'Arcy.—p. 385.
Mussel Poisoning. C. H. Kellaway.—p. 399.

1: 417-446 (April 6) 1935

Mental Hygiene. H. Sutton.—p. 417.
Tumor of the Brain as Met With in General Practice. L. B. Cox.—p. 425.
Whooping Cough, with Particular Reference to Pertussis Vaccine. I. Blaubaum.—p. 432.

Quarterly Journal of Medicine, Oxford

4: 93-292 (April) 1935

Obesity, Hypogenitalism, Mental Retardation, Polydactyly and Retinal Pigmentation: The Laurence-Moon-Biedl Syndrome. E. A. Cockayne, D. Krestin and A. Sorsby.—p. 93.
*Hemochromatosis: I. Content of Tissues in Iron and Sulphur: II. Results of Spectrographic Examination, with Especial Reference to Copper and Calcium. H. Ramage and J. H. Sheldon.—p. 121.
Influence of Infection on Action of Parathyroid Hormone in Man. G. C. Linder.—p. 131.
*Sounds and Murmurs Produced by Auricular Systole. C. Bramwell.—p. 139.
Gallop Rhythm. C. Bramwell.—p. 149.
*Hereditary Pseudohemophilia. R. S. Handley and A. M. Nussbrecher.—p. 165.
Attempt to Demonstrate a Pressor Substance in Blood in Malignant Hypertension. R. S. Aitken and C. Wilson.—p. 179.
Secondary Pellagra. S. L. Simpson.—p. 191.

Hemochromatosis.—Ramage and Sheldon examined the tissues from five cases of hemochromatosis. The diagnosis was established in all cases at necropsy. They observed that there is an increase of iron in all the tissues of the body, with the exception of the blood, brain and colon, the two latter of which are, however, subject to individual exceptions. In certain organs the amount may be enormous, especially in the liver, pancreas, lymph nodes, thyroid, salivary glands, pituitary, choroid plexuses and heart. The increase over normal appears to be greatest in the pancreas. The somatic muscles share in these deposits of iron. The total amount of iron deposited in the body by the time of death appears to vary from about 25 Gm. to from 45 to 50 Gm. There is a slight increase of the total sulphur in certain of the tissues, especially in the alimentary canal. This is probably related to the deposits of hemofuscin. Spectrographic examination confirmed the results of previous chemical analyses in showing that there is an increase of copper in the liver. This increase applies to all the tissues with the exception of the kidney, small intestine and omentum. The general order of increase is between two and three times the normal. Certain of the tissues have an increase of calcium, which is best seen in the liver, thyroid, striated muscles and pancreas. Most of the tissues show disturbances in the behavior of both sodium and potassium, these metals usually swinging in opposite directions. The manganese content of the liver is about one-fourth the normal. No unusual elements were found.

Murmurs Produced by Auricular Systole.—The records of the heart sounds in a case of exophthalmic goiter with partial heart block that Bramwell presents show that the initial vibrations of the first heart sound in normal cycles bear the same time relation to the P wave in the electrocardiogram as do the vibrations of the auricular phonogram to the blocked auricular beats. These two series of vibrations are also similar in form. When the PR interval is prolonged the complete series of vibrations in the auricular phonogram precedes the larger vibrations of the ventricular phonogram, but when the PR interval is of normal duration the two series of vibrations overlap. These observations prove that, in the author's case, the initial vibrations of the first heart sound are produced by the auricle and not by the ventricle. It is suggested that the initial vibrations seen in records obtained from normal subjects may also be attributable to auricular systole. These initial vibrations are, however, usually of such small amplitude that they fail to reach the threshold of audibility. The author suggests that the similarity between the first heart sound in hyperthyroidism, in certain athletes, in some cases of congenital heart disease and in some patients with high blood pressure, and the first heart sound and presystolic murmur of mitral stenosis, may be due to an increased velocity of the blood flow through the mitral orifice when the auricular muscle is hypertrophied. The late development of the auricular sound suggests that it is due not entirely to a muscle tone but in part at least to vibrations set up by the blood ejected by the auricle. Records of heart sounds and murmurs in two cases of mitral stenosis complicated by partial heart block showed that the time relations of the auriculosystolic element of the mitral murmur were strictly analogous to those of the auricular component of the first heart sound in the present case of hyperthyroidism. There is a striking variation in the intensity of the auriculosystolic murmur in different cycles of these records. When auricular systole occurs early in diastole the murmur is loud, but when it occurs at the end of a prolonged diastole it may be so faint that it fails to reach the threshold of audibility. Its absence in cycles following a blocked auricular beat is explained by the inability of the engorged ventricle to accept the auricular output. Summation of the terminal vibrations of the auriculosystolic murmur and the initial vibrations produced by ventricular systole may account for the accentuation of the first heart sound in patients with mitral stenosis.

Hereditary Pseudohemophilia.—Handley and Nussbrecher discuss the literature on hereditary bleeding in women, present three such cases of pseudohemophilia and state that a discussion of the mechanism of bleeding in pseudohemophilia would appear to be useless so long as the major problems of the coagulation of normal blood remain matters of controversy among physiologists. Von Willebrand and Jürgen's work points to some abnormality of the platelets being the most likely cause of the prolonged bleeding, but more evidence must accumulate before this hypothesis can be proved or disproved. The diagnosis of pseudohemophilia must rest on an adequate family history and unequivocal symptoms of bleeding, supported by complete blood investigations. Von Willebrand states that in pseudohemophilia clotting time is normal and bleeding time prolonged. The reverse is true of the cases that the authors describe, and their observations tally with those of true hemophilia. But these two investigations are subject to many pitfalls, and too much reliance cannot be placed on isolated readings. The clotting time varies in the same individual from time to time, and the bleeding time, owing to the lack of standardized technic, at present needs considerable experience in the interpretation of results. To conclude, the authors emphasize that two possibilities have to be weighed in considering their study. It may be an example of pseudohemophilia, or it may be an example of hemophilia with the production of the first homozygous females recorded. They rather believe the former view owing to the evidence of the Mampel tree and Wightman's family, together with the direct transmission of bleeding seen in the earlier part of their family tree. Those who would support the latter view must be prepared to accept the occurrence of bleeding in homozygous females.

South African Medical Journal, Cape Town

9: 179-210 (March 23) 1935

Preliminary Analysis of Series of Cases of Pneumonia Among Natives Over a Period of Nine Years. H. L. Heimann and F. V. Stephen-Lewis.—p. 179.
Antiscorbutic Value of Some South African Foodstuffs as Measured by Their Indophenol Reducing Power. L. F. Levy and F. W. Fox.—p. 181.
Endemic Goiter in the Langkloof Valley. E. E. Buttner.—p. 187.
The First Obstetric School in South Africa. P. J. Venter.—p. 189.
Unwrapped Bread and Intestinal Bacteria. W. Alves.—p. 191.
Blood Groups in Hottentots. A. Pijper.—p. 192.
Summary of Progress in Laboratory Tests of Kidney Function. H. D. Barnes.—p. 195.
Test for Early Diagnosis of Pregnancy on South African Clawed Toad (Xenopus Laevis). H. A. Shapiro and H. Zwarenstein.—p. 202.
The Zeiss "Pijper Blood Cell Tester." A. Pijper.—p. 205.
Bacterial Endotoxoids (Endo-Anatoxins). E. Grasset.—p. 208.

Chinese Medical Journal, Peiping

49: 201-292 (March) 1935

Diabetes Mellitus: Principles and Practice of Dietetic Treatment in the Outpatient Clinic. S. H. Wang.—p. 201.
Vesical Neck Obstruction: Discussion on Hypertrophy of Prostate Among the Chinese. E. T. Kam.—p. 219.
Swimmer's Ear. A. M. Dunlap.—p. 229.
Treatment of Tetanus. A. Swain.—p. 232.
Effect of Aging on Kline Antigen. R. F. Lvoff.—p. 236.
Studies in Chronic Arsenic Poisoning: III. Histopathology of Viscera of Guinea-Pigs Exposed to "Mosquito Incense" Fumes. P. L. Li and C. S. Yang.—p. 240.
Sodium Cyanide in Fly Control. E. Landauer.—p. 246.
Glanders in Man: Case. F. F. Tang, S. H. Liu and L. S. Kau.—p. 248.

Archives des Maladies de l'Appareil Digestif, Paris

25: 233-336 (March) 1935

*Alkali Reserve and Ionic Acidity of Human Bile Removed by Duodenal Tubage. M. Chiray and P. Firmin.—p. 233.
Stomach After Surgery: Roentgenologic Study. M. C. Gross.—p. 243.

Acid-Base Equilibrium of Human Bile.—Chiray and Firmin used the Van Slyke method to determine the free and combined carbon dioxide content of normal bile. In order to determine the limits of variation of biliary alkali reserve, the absorption of carbon dioxide was experimentally studied. Bile from supposedly normal persons, removal by biliary tubage, preserved under oil in the presence of traces of antioxygenating substances and kept in the refrigerator, was used. As a result of these studies it appears that bile is a physicochemical system somewhat similar to blood. The level of biliary alkali reserve reported is not absolute and relates only to the samples under observation. In general, zones of alkalosis and acidosis similar to those in the blood are indicated. The number of complicating factors, however, does not facilitate the interpretation of the observations.

Presse Médicale, Paris

43: 545-568 (April 6) 1935

Anatomoclinical Study of Hanot's Disease with Biopsy of Liver: Case. E. May, G. Albot and A. Debray.—p. 545.
*Gold Salts in Treatment of Established Adult Pulmonary Tuberculosis. Pierre-Bourgeois, H. Thiel and J. Levernieux.—p. 548.
Pathology of Finger Prints. L. Ribeiro.—p. 552.
Technic of Pegging Fractures of Neck of Femur. M. M. d'Aubigné.—p. 555.
Bony Blastomycosis. M. Meyer and A.-R. Sartory and J. Meyer.—p. 558.
Ergothermomanometric Exploration in Diagnosis of Pulmonary Tuberculosis. H. Elster.—p. 561.
False Interpretations of Certain Roentgenologic Aspects of Pulmonary Tuberculosis. G. Scorpati and E. Berthet.—p. 565.
Cancerous Metastasis of Acromion Secondary to Cylindric Cancer of Uterus. H. Fobe.—p. 567.

Gold Treatment of Pulmonary Tuberculosis.—Pierre-Bourgeois and his co-workers deplore some of the uncritical enthusiasm for the treatment of tuberculosis with gold salts. The attempted prophylaxis of pulmonary tuberculosis by this means is especially unjustified. They made careful observations on 850 adult patients with established pulmonary tuberculosis treated by gold salts in conjunction with sanatorium care. They concluded that the psychic effect was good and that gold salts could be useful in addition to this effect. Clinical and roentgenologic improvements occurred in some patients and, although transitory, were nevertheless real. Gold treatment, however, must never impede other more effective antituberculosis procedures. Finally, they believe that the appearance of any therapeutic accident indicates immediate and final discontinuance of gold treatment.

Prensa Médica Argentina, Buenos Aires

22: 805-850 (April 24) 1935

Premature Rupture of Ovular Membranes and Antispasmodic Medication. J. Leon.—p. 805.
*Calcium, a Basic Treatment of Manifestations of Vagosympathetic Dystonia of Upper Air Passages. E. Riccitelli and Y. Franchini.—p. 818.
Chorioma of Testicle. C. A. Videla, D. Vivoli and J. C. Rey.—p. 823.
Osseous Consolidation of Certain Fractures of the Instep. M. J. Fitte.—p. 831.

Calcium in Treatment of Vagosympathetic Dystonia of Upper Air Passages.—Riccitelli and Franchini consider that spasmodic rhinitis belongs to a group of pathologic reflexes of the upper air passages originating in disturbances of the endocrine and the autonomic nervous systems. These reflexes frequently develop in women between 15 and 20 years of age, when the rupture of the sympathetic-parasympathetic equilibrium is frequent. The authors state that there is a relation between the ionic equilibrium of the blood, with regard to calcium and potassium ions, and that of the autonomic nervous system, the rupture of which results in the development of neuromuscular excitability. They consider the great variety of endocrinologic disturbances of vagosympathetic origin a neurosympathetic lability with hyperexcitability of the whole autonomic nervous system, rather than a vagotony or a sympathicotomy, pure forms of which do not exist. The constant presence of high values of calcium and potassium in the blood indicates that a vagosympathetic dystonia exists. Whether the condition is of sympathetic or of vagal predominance, calcium gluconate gives satisfactory results, especially if given with opotherapy or with a general treatment, according to the etiology of the disease. Calcium seems to have no specific action in moderating the parasympathetic or in stimulating the sympathetic, but rather a restorative action on the equilibrium of the two segments of the autonomous nervous system. In cases of spasmodic rhinitis there is a disequilibrium of the calcium and the potassium in the blood, which is restored by the calcium as proved by the reestablishment of the constants of Krauss and Kylin. The restoration of the ionic equilibrium of the blood is followed by that of the equilibrium of the autonomous nervous system and results in immediate improvement of the pathologic respiratory and nervous symptoms.

Archiv für klinische Chirurgie, Berlin

181: 599-722 (April 15) 1935. Partial Index

*Prognosis of Cancer of Breast from Symptoms, Histologic Study, Degree of Maturity and Malignogram. W. Siemens.—p. 599.
Treatment of Osteomyelitis in Childhood. M. Langer.—p. 640.
*Gastric Surgery. K. O. Peters.—p. 651.
Surgery of Perforation of Gastric-Duodenal Ulcer. O. Orth.—p. 674.

Prognosis of Cancer of Breast.—Siemens' material consists of 508 cases of carcinoma of the breast in which radical operations were performed at the surgical clinic of the University of Kiel (Professor Anschütz) between 1908 and 1929. Of these, fifteen, or 2.9 per cent, proved fatal as a result of the operations, and 484 were followed up. Two hundred and nine patients were given postoperative roentgen irradiation, while 175 were not so treated; fifty-nine, in whom operation could not be performed, lived on an average of seventeen months, ten surviving the three year limit and three the five year limit. Dissection of the supraclavicular fossa did not bring about better results in the advanced group. The modern radical operation calls for the removal of a large area of skin, the pectoral muscles and the axillary lymph nodes. The dissection is begun with the removal of the lymph nodes in order to eliminate the possibility of embolic transmission of carcinoma cells. It is questionable whether electrosurgery will add much. The author is impressed with the improvement in the results from the postoperative roentgen irradiation. The combination of preoperative and postoperative irradiation should give even better results. He divides his material on clinical and histologic data into the following groups: I. Small tumor, no palpable lymph nodes and no carcinomatous invasion of these on histologic examination. II*a*. Finding of carcinomatous invasion of lymph nodes. II*b*. Adhesions of tumor to skin or pectoral fascia. II*c*. Invasion of the skin, muscles and lymph nodes. III. Involvement of the supraclavicular lymph nodes. Group I gave 100 per cent of three, five and ten year cures. Groups II*a* and II*b* gave 69.2 per cent of three year cures, 53.2 per cent of five year cures and only 34 per cent of ten year cures. Palpable lymph nodes, regardless of histologic examination, make the prognosis unfavorable, as was seen from a decline from 100 per cent of five year cures to 53.2 per cent. Spread of tumor or of metastases through biopsy was not observed. Other clinical data influencing the prognosis were age, size, duration, type of tumor and its localization in the breast and coexistence with pregnancy. No reliable criteria for the prognosis were obtained from the histologic determination of the type of tumor. The further the spread from the primary tumor within the breast, the worse the prognosis. An attempt to evaluate the prognosis on the basis of grading the maturity of the cancer cells after the method of Broders was not of much help. Hueper's method of prognosticating from a histologic malignogram, based on twenty histologic characteristics, was found to be not as reliable as the less complicated clinical evaluation supported by histologic examination and investigation of the lymph nodes.

Gastric Surgery.—Peters reports the gastric operations performed in Lotheissen's clinic in Vienna from 1922 to 1932. There were 102 patients operated on for cancer of the stomach, 196 for gastric-duodenal ulcer, 170 for free perforation of a gastric or duodenal ulcer, and fourteen for uncontrollable bleeding from an ulcer. The mortality of the operation for carcinoma of the stomach amounted to 45 per cent, for ulcer to

17.34, for perforation 13.4, and for hemorrhage 42.8. Of the forty-seven patients who survived the operation for carcinoma, forty, or 80 per cent, died within from two to three years after the operation. A follow up of 113 patients operated on for gastric-duodenal ulcer showed that seventy-six were completely cured, while thirty-seven had symptoms of indigestion as well as of new ulcers. Of those who survived the operation for perforation, from 80 to 95 per cent were free from symptoms. More careful follow up studies showed that extensive gastric resections were followed from five to ten years later by disturbances in the blood picture, the intestinal flora and the nutrition of the patients. The author mentions three cases in which a hypoblastic anemia developed after a Finsterer resection of four fifths of the stomach. The cured patients were found constantly to have a normal or a subnormal acidity, suggesting that anacidity aimed at by the advocates of extensive resection is not necessarily a favorable factor in the cure. He did not find any difference in the results among those who smoked or consumed alcohol when compared with those who did not smoke and abstained from alcohol.

Deutsches Archiv für klinische Medizin, Berlin

177: 345-460 (April 8) 1935. Partial Index

*Iodine Damages, with Especial Consideration of Disorders Caused by Iodized Salt. Ilse Mühe.—p. 345.
*Changes in Blood Protein Bodies in Salyrgan Diuresis. A. O. Schally. —p. 368.
Combined Chemotherapy and Serotherapy of Recurrent Fever. M. N. Lebedewa.—p. 377.
*Independent Chronic Inflammatory Disorders of Cauda Equina and Their Treatment. T. Mauss and H. Krüger.—p. 382.
Venous Blood Pressure and Diuresis. Béla Groák.—p. 407.

Goiter Caused by Iodized Salt.—After reviewing the history of the prophylactic use of iodized salt, Mühe shows that in addition to statistics which report the efficacy of this measure there have also been reports about the damages caused by iodized salt. A number of cases of goiter were observed in the author's clinic, in which the use of iodized salt seemed to be a causal factor. She points out that it is proved by clinical observations on patients with syphilis and with arteriosclerosis that hypersensitivity to iodine is relatively frequent in southern Germany. Moreover, even the advocates of goiter prophylaxis by means of iodized salt realized the possibility of injurious effects and consequently laid down the following rules: 1. Iodized salt should be used only in quantities that correspond to the usual salt consumption. 2. It should be used only by persons who have a normal sympathetic nervous system. 3. Persons with cardiac defects should not use iodized salt. 4. Patients with goiter or with other incretory disturbances should abstain from the use of iodized salt. 5. Iodized salt should not be used by women during the climacteric period. The author gives the clinical histories of some of the thirty-seven patients in whom the use of iodized salt resulted in exophthalmic goiter, and she emphasizes that goiter prophylaxis by means of iodized salt should be carried out only under medical supervision.

Changes in Blood Protein Bodies in Salyrgan Diuresis.—Schally investigated whether the blood proteins change during salyrgan diuresis and whether these changes are related to the diuresis. He found that following the intravenous injection of salyrgan the albumin increases and the fibrin values decrease. These changes appear regularly with the onset of the diuresis but do not develop after the intake of larger quantities of water. The author believes that the increase in the albumin content is a necessary attendant phenomenon of the mercury diuresis, in that the inflow of water into the capillaries takes place only in case of simultaneous inflow of albumin. During nephrosis there exists a blockade for protein inflow, and thus water is retained in the tissues. Consequently the replacement of the blood protein is blocked and the protein value is low in cases of nephrosis. Salyrgan prepares the capillaries for the inflow of protein and thus also for the inflow of water, counteracting the protein blockade. The capillaries are permeable for protein under normal conditions, and the thesis of the semipermeable membrane cannot be maintained, since the replacement of blood protein must likewise be accomplished through the capillaries. The permeability for protein is dependent on the condition of the capillaries and is one of their vital functions.

Disorders of Cauda Equina and Their Treatment.—According to Mauss and Krüger, independent inflammations of the roots of the spinal nerves have been designated as radicular neuritis or as radiculitis, and it was generally assumed that they were caused by syphilis or tuberculosis; that is, by processes which developed in the meninges or bones and from there spread to the roots. That they may be caused also by other conditions has been recognized in recent years. It appears that the caudal roots are most frequently involved, and for this reason the authors decided to study this form of radiculitis more thoroughly. They report the histories of three patients who underwent surgical treatment and they evaluate the various therapeutic measures that may be employed in chronic inflammations of the cauda equina. They reach the conclusion that there are disorders of the caudal roots, which may be caused by various infections and intoxications. Considered from the anatomic pathologic point of view, these are chronic inflammatory processes commencing in the meninges, particularly the soft meninges and the coverings of the roots, which, in their further course, may involve also the parenchyma. These meningoradiculitides appear in all forms from simple lumbar or sacral radicular neuralgia up to severe symptoms of compression. They are acute, subacute or chronic in character, and, depending on the anatomic development of the process from the periphery to the center, an irritative and degenerative phase can be differentiated. The majority of cases remain for a longer or shorter period in the phase of radicular irritation and present only slight sensory disturbances in addition to the radicular pain. A careful examination of the sensibility is therefore necessary if the radicular origin of the lesion is to be recognized. Occasionally the diagnosis can be supported by the detection of an increase in the protein content of the cerebrospinal fluid, even if there is no compression in the cauda equina; however, this symptom is frequently absent, particularly during the later course of the disorder and, in a considerable number of cases, the diagnosis must therefore rely on the detection of the segmentally localized disturbances of sensibility. The treatment consists, in addition to general and local measures, of epidural injections, eventually combined with repeated spinal punctures. Surgical treatment is indicated only in the severe forms, in which a chronic serous or fibrous meningitis exists and in which spontaneous recovery is doubtful.

Medizinische Klinik, Berlin

31: 537-568 (April 26) 1935. Partial Index

Treatment of Diabetes in General Practice. C. Oehme.—p. 537.
*Etiology and Symptomatology of Meralgia Paraesthetica. O. Sittig, A. Herczeg and A. Schönfeld.—p. 543.
Concurrence of Diabetes Mellitus and Bronchial Asthma. F. König.—p. 545.
*Modern Therapy of Schizophrenia. G. Giehm.—p. 547.
*Treatment of Paroxysmal Tachycardia with Large Doses of Quinidine. S. Feher.—p. 549.

Meralgia Paraesthetica.—Sittig and his associates report the histories of four patients with meralgia paraesthetica (Bernhardt's disease). Their observations indicate that the disturbances in the sensibility may be of various types; namely, pains, paresthesias, insensibility only when touched, and hypesthesia or hypalgesia only when the sensibility is tested without subjective disturbances. The authors point out that in their first patient the disorder developed after a laminectomy, in the second after a subcutaneous injection into the thigh, and in the third after a trauma. The fourth case is noteworthy because tests revealed that the sensitivity to pain and to cold was reduced and yet there was no subjective discomfort. The authors state that in the first patient there existed a spina bifida of the fifth lumbar vertebra and a sacral hiatus. Moreover, in the first and third patients rheumatoid or neurotic pains (sciatica) preceded the development of the symptoms of meralgia paraesthetica, and other reports record this same observation.

Therapy of Schizophrenia.—Giehm points out that the etiology of schizophrenia is still a matter of dispute and that, because this factor has not been cleared up, numerous therapeutic measures have been suggested. He lists twenty different methods together with the names of those who recommended the different measures and shows that these methods can be classified in three groups: the sedative methods, the shock thera-

pies and the psychotherapeutic methods. It appears that patients with schizophrenia are subject to endocrine disturbances. Whether these endocrine disorders are the cause or the result of schizophrenia has not been established as yet, but it is evident that relations exist between schizophrenia and the glands of internal secretion. The author decided to give attention to this endocrine factor in the treatment. He combined fever therapy with hormone injections. The fever therapy was carried out by injecting a bacterial protein preparation once or twice each week. The total number of injections varied between eight and twelve. The author treated thirty patients in all. The fever therapy was followed by hormone injections. The hormone treatment was adapted to the different endocrine disturbances. The combination therapy produced encouraging results. A tabular report indicates that it was most effective in the late catatonic, the catatonic and the hebephrenic forms of schizophrenia. The restlessness and anxiety subsided gradually, sleep improved and the hallucinations disappeared. In patients with paranoid disorders and with dementia simplex, the combination fever and hormone therapy was of little avail.

Treatment of Paroxysmal Tachycardia with Quinidine.—Feher reports two especially severe cases of paroxysmal tachycardia, in which the continuous oral administration of large doses of quinidine proved effective. The patients were given daily from 2.5 to 4.5 Gm. They tolerated this treatment well and the author is convinced that it is superior to the continuous treatment with intravenous injections of quinine. He considers the oral administration of large doses of quinidine indicated in prolonged and daily recurring attacks of paroxysmal tachycardia. However, the treatment is contraindicated in patients with severe circulatory insufficiency.

Münchener medizinische Wochenschrift, Munich

82: 651-690 (April 25) 1935. Partial Index

Relations of Sympathetic to Parasympathetic System. L. R. Müller.—p. 651.
*Complications Caused by Meckel's Diverticulum. E. Neumann.—p. 655.
*Indications for Parathyroidectomy. R. Wanke.—p. 657.
Roentgenologic Aspects of Brain and Its Meninges. F. Schörcher and W. Bussem.—p. 663.

Complications Caused by Meckel's Diverticulum.—Neumann points out that Meckel's diverticulum is a persistent remnant of the omphalomesenteric duct and occurs in from 2 to 3 per cent of persons. It may lead to intestinal obstruction or acute inflammatory abdominal disturbance. Even peptic ulcers have been known to develop in Meckel's diverticulum, for it may contain islands of gastric mucous membrane as well as of pancreatic tissue. The author emphasizes that in abdominal disturbances with obscure etiology the surgeon should consider the possibility of complications due to the existence of Meckel's diverticulum. If in the course of a laparotomy done on account of symptoms indicating appendicitis the appendix is found to be normal, it is necessary to inspect the lower portion of the ileum so as not to overlook a Meckel's diverticulum. Moreover, in case of umbilical anomalies and of recurring abdominal colics, Meckel's diverticulum should also be thought of. The author reports six cases in which a Meckel's diverticulum caused complications, the type differing in every case. He observed strangulation ileus, severe inflammation and kinking as in adhesion ileus, umbilical inflammation, Littré's hernia and umbilical fistula. He emphasizes that complications arising from Meckel's diverticula may develop at any age: one of his patients was 5 and another 69 years old. Some diverticula, even large ones, never cause complications.

Indications for Parathyroidectomy.—Wanke points out that in recent years parathyroidectomy has been done occasionally without adequate justification in disorders in which the etiology had not been cleared up as yet. He concedes that in generalized osteodystrophia fibrosa (von Recklinghausen), in which there exists a disturbance of the calcium metabolism, parathyroidectomy has been found effective. However, he thinks that the intervention should not be carried out until after the demonstration of a pathologic increase in the calcium content of the urine and the blood serum and that the metabolism should be carefully examined in doubtful cases. In cases of abnormal calcium metabolism, resulting from a hyperfunction of the parathyroids, the intervention usually discloses a tumor-like hyperplasia of one of the lower parathyroids. The removal of this hyperplastic parathyroid body is generally followed by a decrease in the formerly pathologically increased calcium values of blood and urine. The author describes his studies on the calcium metabolism of a patient with ankylopoietic spondylarthritis (Bechterew), in whom parathyroidectomy had been done on the basis of fluctuations in the calcium content of the blood. The postoperative tests revealed that the hypercalcemia had not been influenced by the operation. The author shows that in ankylopoietic spondylarthritis the hypercalcemia is not the manifestation of a disturbance in the calcium metabolism but probably the result of an increase in the calcium that is being transported because of a calcium atrophy of the skeleton resulting from immobilization. He points out that on the basis of histologic studies on ankylopoietic spondylarthritis the disorder is not a degenerative reaction but rather a typical arthritis with round cell infiltration, hyperemia, proliferation of the connective tissue and subsequent ossification. The chemical as well as the morphologic aspects indicate that ankylopoietic spondylarthritis is not an endocrine or a degenerative disorder, and parathyroidectomy can therefore have no therapeutic effect.

Zeitschrift für Tuberkulose, Leipzig

72: 321-456 (April) 1935

*Pneumothorax Therapy, Particularly Its Renewal. K. Veiel.—p. 321.
Peculiar Case of Pulmonary Atelectasis in Artificial Pneumothorax. G. F. Bume.—p. 340.
Blood Picture in Tuberculosis. J. Leitner.—p. 343.
Relation Between Physician and Patient in Public Sanatorium. T. Peters.—p. 378.
*Tuberculosis and Endocrine System. D. Epstein.—p. 383.

Renewal of Pneumothorax Therapy.—Veiel tried the renewal of pneumothorax in fourteen cases. He succeeded in eight, but the pneumothorax was not therapeutically effective in all of them. He gained the impression that the prospects for a successful renewal are greater in patients with exudative foci (infiltrative processes) and other signs of increased sensitivity (increased temperature and deviation to the left) than in cases with a chronic productive course. The duration of the first pneumothorax and the interval between its cessation and its renewal are of no essential importance for success or failure. The development of an exudate during the first pneumothorax does not necessarily lead to development of adhesions between the pleurae. However, in case of a large exudate later development of adhesions is probable. If the first pneumothorax is maintained until the foci have largely healed, pleural adhesions are less likely than if the pneumothorax is interrupted earlier. The author describes two cases of pneumothorax in which the lung expanded considerably under an exudate and part of the exudate entered the upper portions of the pleural cavity. This condition appeared in the roentgenogram like a pleural adhesion with a superimposed exudate. However, the introduction of a small amount of air was sufficient to collapse the lung again and let the exudate slide down. The author reaches the conclusion that, if a relapse develops in a patient who has been treated with pneumothorax, an attempt should always be made to renew the pneumothorax. Only after several such attempts have failed or the renewed pneumothorax proves ineffective is there justification to resort to thoracoplasty or to other surgical interventions. No efforts should be spared to maintain the pneumothorax until the solid healing of the foci has been effected, for that is the best protection against a relapse. If a progressing lesion makes a bilateral pneumothorax necessary, the older pneumothorax should not be discontinued too soon. The pneumothorax is most frequently interrupted on account of high exudates that may produce adhesions between the pleurae. In such cases it is necessary to watch for the onset of the resorption by regular roentgenoscopies and pressure controls and then to collapse the lung again either by simple refilling or, if necessary, by withdrawal of a portion of the fluid and its replacement by air. Even in cases in which the roentgenogram seems to indicate the presence of adhesions, attempts should be made to renew the pneumothorax, for the exudate may only have been pressed upward and the lung may only lean against the thoracic wall and not yet adhere.

Tuberculosis and the Endocrine System.—Epstein shows that a study of the relationship between tuberculosis and the endocrine system should consider three factors: 1. How do

functional anomalies in the endocrine system influence the course of the tuberculous process? 2. How does tuberculosis manifest itself in any of the endocrine glands? 3. How does the tuberculous process influence the functions of the endocrine glands without producing specific changes in them? The author first considers the thyroid and shows that tuberculosis is rare or, if present, takes a mild course in patients with hyperthyroidism. The development of tuberculous foci in the thyroid is rare, and they lack a progressive tendency when they occur. There is evidence that the thyroid is an important factor in protecting the organism against tuberculosis. The thymus likewise is rarely affected by tuberculosis and seems to play a defensive part in the organism's fight against tuberculosis. In discussing the hypophysis, the author points out that its glandular portion may be destroyed by a tuberculous process. The latter may be isolated or the manifestation of a generalized tuberculosis. Moreover, in addition to these purely tuberculous processes, tuberculotoxic changes may take place in the hypophysis. The clinical aspects of tuberculosis of the hypophysis is characterized by a deficiency of symptoms. Some authors mention the presence of comatose conditions, falling out of the hair and psychologic changes. Regarding the relation between the adrenals and tuberculosis, the author points out that insufficiency of the adrenals in the form of Addison's disease is a postprimary tuberculosis. Diabetes mellitus, the manifestation of insufficiency of the pancreas, produces a predisposition for severe forms of tuberculosis, and a tendency to caseation is most pronounced in tuberculous patients with diabetes mellitus. Moreover, tuberculosis of the pancreas is not as rare as is frequently assumed, but toxic manifestations in the pancreas in the form of a sclerosis of the organ are more frequent than tuberculous foci. Tuberculosis frequently becomes activated during the period of puberty, particularly in females. Gestation and lactation likewise seem to stimulate the tuberculous process, while during the menopause and in aged persons tuberculosis seems to take a rather mild course. Menstruation may be normal, but dysmenorrhea and amenorrhea do also occur during tuberculosis. The author mentions increased libido during tuberculosis, exacerbation of the tuberculous process with the onset of pregnancy, rare concurrence of severe phthisis and testicular tuberculosis, and retardation of the tuberculous process following castration. Some authors warn against the use of ovarian preparations in amenorrheal patients with tuberculosis.

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*Studies on Physiology of Milk Production. K. J. Anselmino, L. Herold and F. Hoffmann.—p. 963.
Puerperal Mastitis. K. Holzapfel.—p. 969.
*Use of Urine of Pregnant Women in Form of So-Called Hormone Clysters in Treatment of Menstrual Disturbances. R. Tachezy.—p. 972.
*Decidua Formation in Cervical Polyps and Its Diagnostic Significance. H. Willer.—p. 979.

Physiology of Milk Production.—Anselmino and his associates show that by means of female sex hormones it is possible to produce in the rudimentary mammary glands of castrated male rabbits the changes that are characteristic of pregnancy and that the male animals can be brought to lactation if they are treated subsequently with the lactation hormone of the anterior lobe of the hypophysis. In studying the developmental phases through which the mammary glands of these animals pass, the authors found that the follicular hormone stimulates the growth of the lactiferous ducts and that, following this preliminary treatment, the alveoli develop under the influence of the active principle of the corpus luteum in collaboration with small amounts of estrogenic substance. After the mammary glands have been completely developed under the influence of the female sex hormones (follicular hormone, active principle of corpus luteum and estrogenic substance) they respond to the lactogenic stimulation of the lactation hormone of the anterior lobe of the hypophysis and true lactation develops in the castrated male animals. The action of the lactation hormone is dependent on the developmental stage of the mammary glands; the hormone is ineffective if the alveoli are not sufficiently developed. Thus, whereas the female sex hormones produce the development of the female breast without stimulating lactation, the hormone of lactation elicits lactation without influencing the development of the mammary gland. The concerted action of the various hormones results in lactation.

Urine of Pregnant Women in Treatment of Menstrual Disturbances.—Tachezy employed the urine of healthy women who were in an advanced stage of pregnancy. He administered the urine in the form of enemas. In order to obtain a more rapid resorption, the so-called hormone enema of 100 cc. of urine from pregnant women was preceded by a cleansing enema. The number of hormone enemas differed in the various cases. In one of the patients, fifty-two were administered in twenty-six days. The author employed them in nineteen cases, especially in patients with oligomenorrhea and amenorrhea. The results were satisfactory in most cases. The treatment had a favorable effect not only on the ovarian function and menstruation but also on the entire organism. The author thinks that the favorable effect of these hormone enemas may be due to the fact that a not entirely pure hormone preparation was used. He points out that Siegert likewise expressed the opinion that an incompletely purified preparation is more effective than crystalline estrogenic substance. It is possible that accompanying substances facilitate the resorption. The method has the advantage that it permits the administration of large quantities of hormone in a form in which they are eliminated by the organism. The author concedes that the method is not esthetic but emphasizes that it is inexpensive and generally easily obtainable.

Decidua Formation in Cervical Polyps.—Willer describes the histories of four women with decidua formation in cervical polyps and the simultaneous existence of intra-uterine pregnancies and gives a tabular report of seventeen cases he found in the literature. In discussing the development of the ectopic decidua formation in cervical polyps he emphasizes the importance of inflammatory processes, on the basis of which develop changes that resemble greatly the mucous membrane connective tissue of the uterus and on which the specific hormone actions of pregnancy can exert their influence so that a decidual transformation may take place. This signifies that the detection of ectopic decidua formation in a cervical polyp removed on account of hemorrhages or other manifestations may eventually be the first sign of an existing pregnancy. The author cites a case in which he thinks that a previously unrecognized pregnancy might have been preserved if, instead of an immediate curettage, the results of the histologic examination of the polyp had been awaited.

Vrachebnoe Delo, Kharkov

18: 1-96 (No. 1) 1935. Partial Index

Procaine Hydrochloride Blocking as Method of Influencing Nourishment of Tissues. A. V. Vishnevskiy.—p. 1.
Symptoms and Treatment of Pneumonia in Children. P. S. Medovikov.—p. 17.
Symptoms of Miliary Tuberculosis in Early Childhood. S. V. Rodkin and P. S. Klimenko.—p. 23.
Bacteriologic Diagnosis of Epidemic Cerebrospinal Meningitis. V. S. Derkach.—p. 55.
*Autohemocerebrospinal Fluid Therapy of Chronic Encephalitis (Parkinsonism). V. Seletskiy, D. M. Mitnitskiy and A. A. Fridman.—p. 61.

Treatment of Parkinsonism.—Seletskiy and his co-workers report a method of treating chronic encephalitis (parkinsonism) by injection of the patient's own blood in the cerebrospinal canal. The method consists of first withdrawing 1 or 2 cc. of cerebrospinal fluid and replacing it by the same amount of blood taken from the vein of the patient. From three to five treatments were given at intervals of from five to seven days. The first two injections were well borne, headache, nausea, malaise or rise in temperature not being noted. The subsequent injections were not so well tolerated, and the patients complained of fatigue and loss of appetite. The treatment was administered to ten patients. The earliest improvement was noted in the gait, which became livelier, freer and more energetic. The masklike facial appearance diminished and the voice became stronger and louder. The patients became less apathetic and more sociable and communicative. In some of the patients there was a diminution of salivation, improvement in the act of mastication and to some degree diminution of the symptom of propulsion. However, the tremor of the hands and feet as well as myoclonia were not in the least benefited. The effects of the treatment are temporary, but repetition of it again produces favorable results. The authors regard the improvement in the symptoms as a nonspecific protein effect.